

Flight, October 15, 1910.

# FLIGHT

First Aero Weekly in the World.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

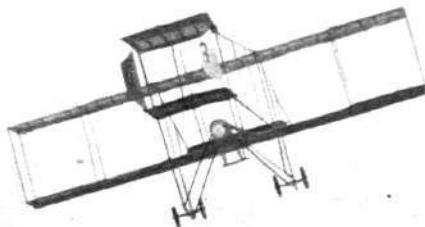
OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

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FLIGHT.

FLYING AT BROOKLANDS FOR THE NEILL CUP.—M. Blondeau making a good turn on Mrs. Grace Bird's Farman biplane.

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## NATURAL STABILITY v. QUICKNESS OF CONTROL.

ELSEWHERE in this issue will be found a brief description of a special form of aeroplane that has, as its principal characteristic, a floating connection for the attachment of the wings to the body so that the wings are capable of canting about the fore and aft axis of the machine, independently of the body.

The basic underlying idea of the system is to obtain greater rapidity of control by eliminating the effect of the inertia of the body, which essentially contains the principal masses. It necessarily involves the assumption that this is a greater desideratum than any advantage accruing in the way of initial natural stability from this same inertia when the body is, as ordinarily, rigidly attached to the wings. As we have noticed that this idea of disassociating the supporting members of an aeroplane from the load that they carry is one that is prevalent among students of aviation, we take this opportunity of passing a few remarks upon the broader aspects of the principles involved without any pretence of considering the pros and cons of the relative constructional convenience of the two systems.

For our own part we find it difficult to accept any validity for the point of view that professes to see a distinct fundamental benefit in quickness of control over natural stability, although we admit that the idea of reducing the effect of inertia has a *prima facie* claim to consideration in view of the now very generally accepted belief that a minimum moment of inertia is desirable in the design of the machine as a whole.

We refer to the pros and cons of the ascentric (or underhung) and concentric positions of the centre of gravity in respect to the centre of pressure. There is a general tendency at the present time to concentrate all the principal masses as far as possible in one spot, which is coincident or nearly coincident with the centre of pressure. This undoubtedly reduces the moment of inertia of the machine about its longitudinal axis, and on first thoughts it might be argued from this that the disconnection of the body from the wings altogether, which would bring about a still further reduction in the moment of inertia, would be even more advantageous.

It does not, however, seem to us logical to take this line of reasoning, for the moment of inertia of the machine as a whole is not altered by the separation of the wings from the body although the moment of inertia resisting movement of the wings alone is itself very materially reduced. Other things being equal, however, the inertia of the body surely constitutes a factor of natural stability inasmuch as it increases the resistance of the machine as a whole to *initial* canting, and that after all is the great desideratum. If the resistance thus offered is inadequate to prevent canting, then the same



### Aviation Classes at Birmingham.

THE authorities of the Birmingham Technical School have been approached by the Midland Aero Club with a view to classes being instituted to deal with aeronautical subjects. The idea has been favourably received, and the Midland Aero Club are ascertaining from their members how far they would support such a course. The Council propose, in the event of the classes being held, to encourage members in every way possible by rebating the fees of those who complete the course, and by offering prizes for general proficiency and for the best essay on the work done during the session.

inertia will, of course, interfere with the immediate restoration of equilibrium, but practice has not shown that this interference is of a preventative order of magnitude except in some cases of the underhung load. By separating the wings from the body, the advantages and disadvantages of its inertia are both apparently eliminated, but to argue that this is, therefore, the better system, is to suggest that the advantage of inertia in the first place was purely imaginary. It seems to us that this idea of separating the wings from the body is merely transferring the operations of control an octave, so to speak, up the scale.

It must, after all, be remembered that the purpose of control is to keep the wings in the proper position of transverse equilibrium. If it were immaterial whether they remained in this position or not, then there would, of course, be much to be said for disconnecting them from rigid attachment to the body. It may perhaps be recollect that there was a peculiar model exhibited at the last Olympia Show in which a series of planes were mounted in a kind of cage surrounding the body of the machine, about which it was free to rotate. The device was so arranged that an equal amount of supporting surface was exposed on either side of the vertical axis for any position of the cage, and indeed the wings could revolve about the body all the time if necessary without destroying their normal transverse equilibrium. In some respects such a principle of operation deserves to be regarded as the logical development of the fundamental idea that we are discussing, for if the design is restricted to one pair of wings, it is absolutely essential that these should be maintained in their proper position, since the machine cannot be supported in flight if they are to be canted for any appreciable time.

With the inertia of the body eliminated, a given wind gush will presumably cant the wings to a greater degree than would result from the same force if the wings were directly attached to the body itself, and the action would also essentially take place more quickly. True, the restoration of equilibrium could likewise be made more quickly with a given degree of warping, but this factor, taken in conjunction with the initial disturbance, has no claim to be considered as an advantage *per se*. If a machine with rigid wings once canted could not be righted with a fair degree of certainty under ordinary flying conditions, the situation would be altogether different, but while pilots have this degree of control within their power, progress is rather to be sought along the lines of increased *natural* stability, which prevents canting, than in means for more quickly restoring an equilibrium that has itself been more readily disturbed thereby.



### Aeroplanes for French Colonies.

THE French Aerial League has lately brought to the attention of the Minister of the Colonies the great advantages which will accrue from the development of aeroplanes in connection with transport in the French colonies and possessions which include large tracts of desert. The Minister has assured the League that he is fully alive to the possibilities of the new mode of locomotion, and will do all in his power to facilitate its development. With this end in view he has requested the various Governors-General to furnish him with all particulars regarding their territories, which will be useful to designers of aeroplanes, &c.

## FLIGHT PIONEERS.

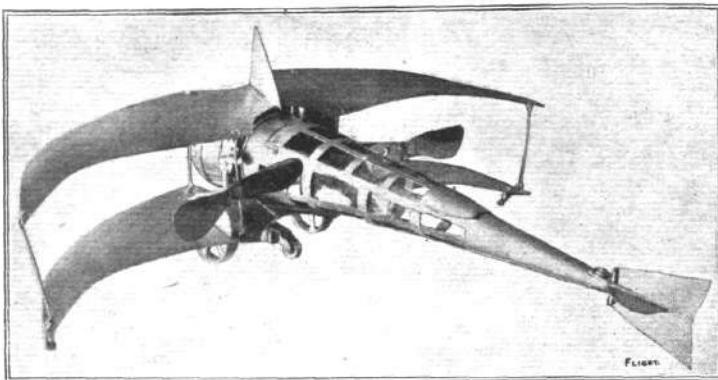


M. EMILE LADOUGNE.

## THE CRUCIFER AEROPLANE.

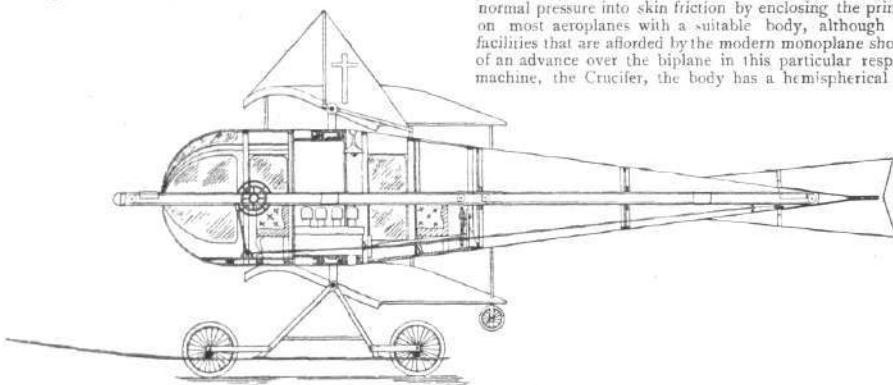
THE accompanying illustrations show a type of aeroplane—not yet actually constructed except in model form—that has as its principal characteristic a floating connection for the attachment of the wings to the body. The body itself is fish-shaped, and is encircled by a huge ball-bearing, to the outer race of which the main planes of the machine are rigidly connected. The object of this method of construction is to allow the planes freedom of canting movement, so that when they are displaced from their proper position of transverse equilibrium their canting shall not have any effect on the position of the body itself. The inventor of this system, which forms the subject of patent No. 8,687 of 1909, is Mr. L. B. Goldman, and the fundamental idea underlying his design is that the principle involved confers an enhanced facility of quick control on the machine to which it is applied.

On the pros and cons of the fundamental principle involved in this system we have some remarks to make in our leader this week. There are several other interesting features of the Crucifer aeroplane deserving of brief reference, although space does not permit of a very detailed description of such a machine as this prior to its practical development.



Back view of a model of the Crucifer aeroplane, showing the tapering conical tail and the twin propellers.

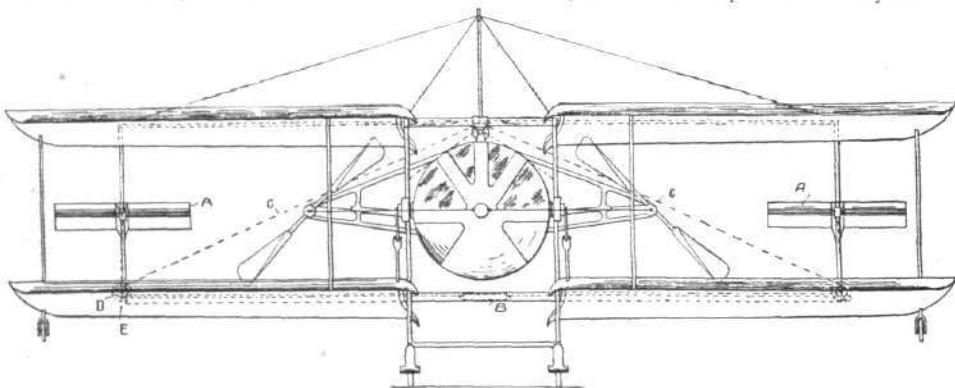
the fish-shaped, or stream line form, construction that in one or other of its various styles must almost necessarily come into vogue in later stages of aviation if the high speeds that are anticipated become common practice. At the moment little effort is made to convert normal pressure into skin friction by enclosing the principal masses on most aeroplanes with a suitable body, although the natural facilities that are afforded by the modern monoplane show something of an advance over the biplane in this particular respect. In this machine, the Crucifer, the body has a hemispherical head, short



Sectional elevation of the Crucifer aeroplane.

The control of the planes about the body is intended to be effected by the automatic operation of balancers, A, which are

cylindrical trunk, and a long gradually-tapering tail. Another peculiarity of the Crucifer aeroplane that is worthy of notice is the



Front elevation of the Crucifer aeroplane.

adjusted by a chain mechanism, C, that is moved by a running weight, B. The body of the Crucifer aeroplane is an example of

backward slant of the main planes, in which respect it resembles the Dunne machine.

## SPEED-ALARMS FOR FLYERS.

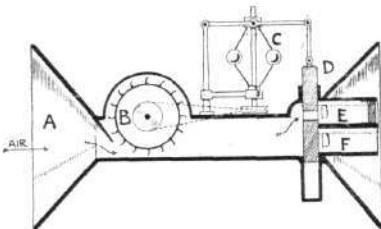
### SOME MORE COMPETITIVE DESIGNS FOR OUR £5 PRIZE.

[17] I herewith enclose sketch of a safety whistle for aeroplanes.

The wind enters the apparatus at A, and passing beneath the baffle-plate rotates the turbine, B; this in turn acts upon the governor-balls through the medium of a belt and pulleys, or through a worm-gear.

At normal speeds the plunger, D, is in the position illustrated, allowing the air to pass through a hole in it, into the whistle, E, which being plugged at the other end emits a low note.

When the wind pressure increases the turbine revolves faster, causing the governor balls to fly outward, thus depressing the



plunger, D, so that the hole in it takes up a position opposite the mouth of the whistle, F, which being open at the other end emits a high note. By screwing the plug at the end of E in or out a difference of one or two octaves between the two notes can be obtained, and the sudden change from a low note to a high one would not pass unnoticed by the aviator.

The apparatus can be adjusted to the speed of the aeroplane on which it is fixed by altering the size of the pulley-wheels, or fitting an Iris diaphragm in front of the baffle-plate.

Hull.

E. G. EVANS.

[18] In the enclosed designs for a speed-whistle, Fig. 1 is a sectional elevation through line Y, Z, on plan, Fig. 2. Fig. 3 shows front view of bracket, O; bracket, D, is of similar design, but the whistle is of smaller size.

The action of the alarm takes place as follows:—

Air passing into funnel and up tube, A, is allowed to pass through holes, B, which are round tube, A, into annular passage, C, in bracket, D, and blows slow-speed whistle, E, until the speed is attained that may be considered safe, the tension-springs, LL, one end of each of which is fastened on peg, H, and the other to end-plate, J, screwed into end of tube, A), keeping tube, A, in position against wind pressure.

When the speed is increased from this point, the pressure, acting on funnel, is greater than the tension in springs, LL, and tube, A, which is an easy sliding fit in brackets, G, D and O, begins to travel in direction of arrow, M, the holes, B, move away from annular passage, C, and whistle, E, ceases to blow. As the speed increases, the tube moves further back until holes, B, are in connection with the annular passage, N, in bracket, O, and the high-speed whistle, K, begins to blow, and this is of a distinctly different tone to whistle, E.

The supporting bracket, G, which may be fastened to the framing of machine, carries the bosses, PP, holding indexed tubes, FF, which carry brackets, D and O. The tubes, FF, have a small slot running their full length, and are sprung to give a tight sliding fit in brackets, D and O, and are also indexed on side, allowing whistles to be set to blow at any desired speed before starting.

Leicester.

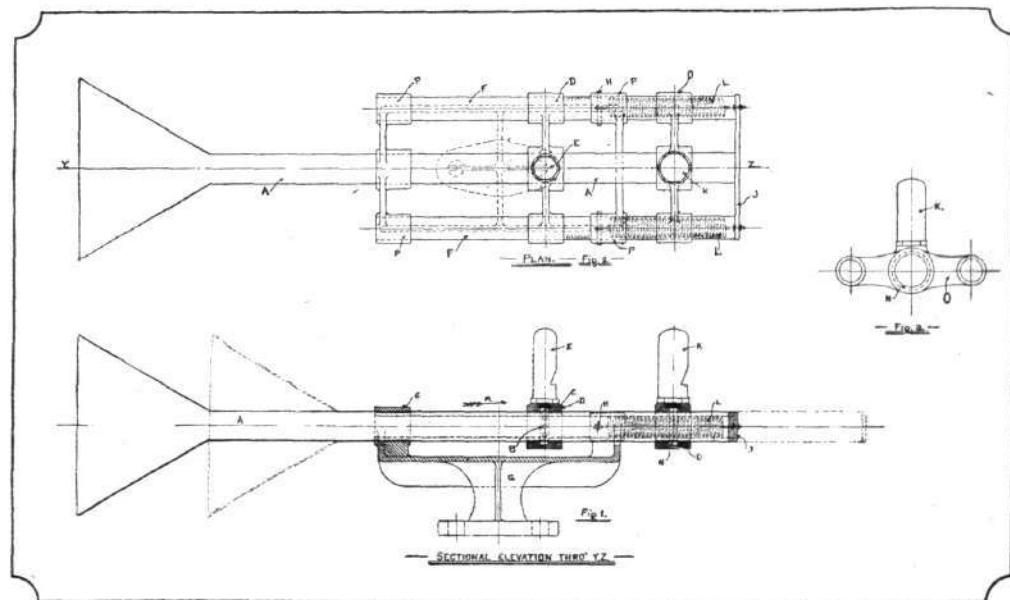
G. A. CHAPMAN.

[19] I enclose herewith drawing of my idea for a speed alarm. You will notice an absence of springs and funnel arrangements. As the alarm has to be reliable I think weights are more reliable than springs, which, with constant use (as on an aeroplane) are liable to lose some of their tension and, therefore, unless renewed, are not accurate. With regard to funnel arrangements I think, when an aeroplane is travelling through the air, the draught, if measured through a funnel, will be considerably accelerated when it gets through the narrow opening. For instance, when water is forced into a narrow gulf it rises and obtains more force, as in the Bay of Fundy, between Nova Scotia and New Brunswick, in Canada, and as the air through the funnel has no room to rise, it consequently gains more speed.

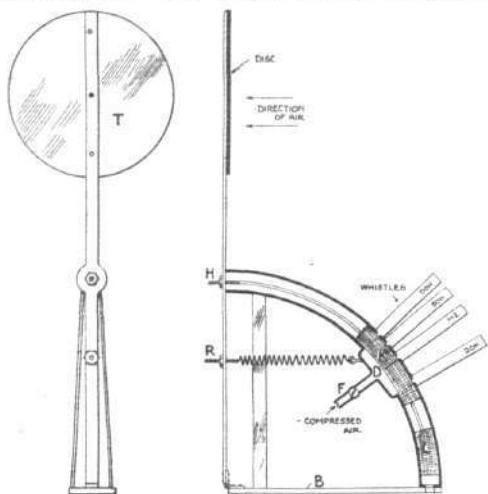
I think you will consider the enclosed drawing of alarm very neat, compact, light, reliable, and undoubtedly accurate and cheap.

Fleetwood.

FRANK ROBERTS.



[20] The accompanying sketch shows a speed alarm for aeroplanes, comprising a series of separate whistles tuned to distinct notes of the scale. These whistles are situated radially upon a



curved pipe containing a pair of pistons, K, L, so arranged as to admit compressed air to the whistles according to the speed of the machine. The action of the pistons is controlled by a lever carrying a circular disc, T, facing the line of flight. This lever is hinged at X, which is also the centre of curvature for the tube, D, carrying the whistles. A spring, R, resists the motion of the disc.

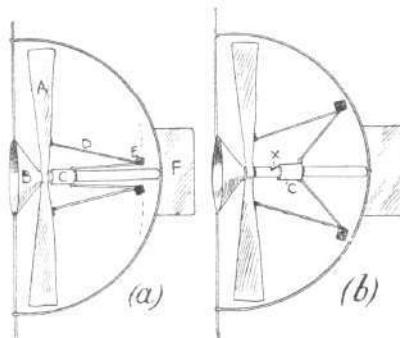
Nuneaton.

[21] In connection with your speed alarm competition, herewith sketches of a device which may be worthy of notice.

The action is simplicity itself, a feature being the entire absence of gearing.

XERCES.

When in repose (see A) a cylindrical sheath, C, covers whistle exhaust, and when in motion the whistle is brought into operation



by centrifugal force—the sheath, C, sliding along and thereby exposing the outlet, X, to rush of air (see B).

A. Windmill blades. B. Funnel and whistle. C. Sheath covering whistle exhaust. D. Springs. E. Weights. F. Tail to keep funnel facing wind. X. Whistle outlet.

Action.—The device is actuated by centrifugal force, the weights, E (connecting blades, A, and sheath, C), flying outward when in motion, thus sliding the sheath along and uncovering the whistle outlet.

Speed being diminished, the weights gradually incline inwards (see A); sheath, C, recedes to normal position and automatically shuts off the sound. Dotted lines show position of weights when whistle is sounding.

Cambridge.

W. J. STALLAN.

Further letters, accompanied by descriptions and drawings, for the Speed Alarm Competition are acknowledged from:—

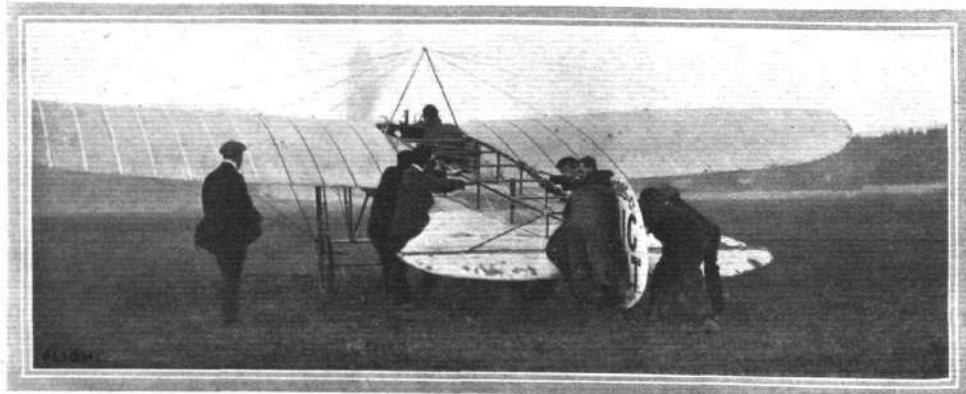
Lionel C. Hoardley.	H. Hewett.	M. van der Spuy.
G. Norman Grant.	H. Warrington.	J. Campden.
Fredk. H. Best (2).		

### FERAT PALMAM QUI MERUIT.

O, weep for the brave, for our noblest and best,  
Who have flown their last flight and found their last rest.  
The engines are stilled that were throbbing of yore,  
The wide planes are shattered to flutter no more.  
O, weep for the brave, for the seekers of truth,  
Who yielded their lives in the flower of their youth,  
And lay on the grave of each well-honoured name  
A circlet of laurel—the guerdon of fame.

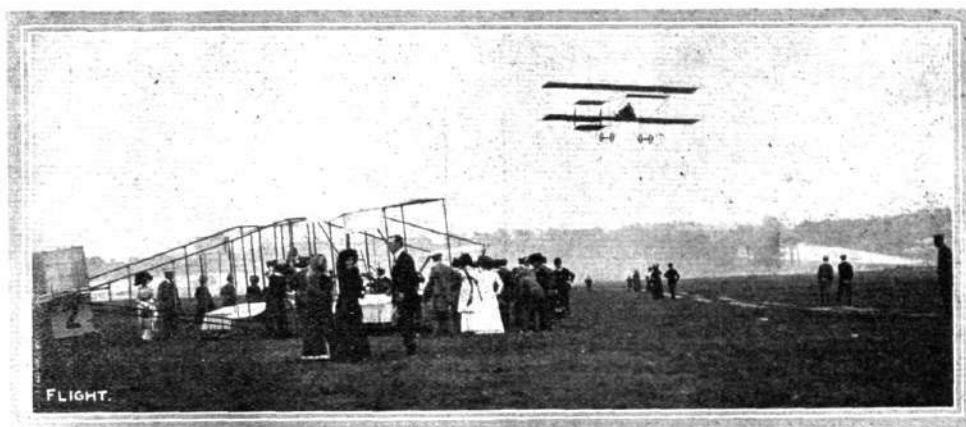
O, weep for the brave who have striven that we  
As lords of the air in the future may be.  
O, shame on the world that has nothing but sneers  
For what they accomplished, the brave pioneers.  
O, weep for the brave, but of joy be your tears,  
They reap the rich harvest of nobly spent years.  
O, happy are they who have died in the hour  
When triumph was theirs and the fulness of power.

DOROTHY M. HAWARD.



Mr. D. Graham Gilmour just before his start, on his Gnome-engined Biérot, for his second flight last week for the Nell Cup.

## FROM THE BRITISH FLYING GROUNDS.



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THE AGGREGATE TIME FLIGHT COMPETITION AT BROOKLANDS FOR THE NEILL CUP.—M. Blondeau making a flight. On the ground is Mr. Macfie's biplane, Mr. Macfie, without a hat, standing in the foreground.

## Royal Aero Club Ground, Eastchurch.

INTEREST this week has centred around the doings of Mr. Frank McClean, who has been making some good flights on his "Short" biplane. On Tuesday and Wednesday in particular he made half-a-dozen trips of some 20 minutes each at an average height of about 100 ft. His machine behaved splendidly, and Mr. McClean appears quite at ease in her now that he has accustomed himself to the Gnome engine.

On Sunday Mr. McClean put in a full day, his flights of about half an hour's duration each totalling not far short of six hours. The feature of his flying this week has been some very creditable exhibitions of planing.

Mr. Jezzi, as usual, was hard at work throughout the week end, and his performances on the biplane of his own construction continue to show marked improvement. He now flies three or four times round the course at about 30ft. quite comfortably.

## Brooklands Aerodrome.

LAST Wednesday, October 5th, was without doubt the best flying meeting yet seen at Brooklands. The weather was most propitious, little or no wind, and the sun shone brilliantly.

Mr. Graham Gilmour took first place for his very fine performance on his two-seated Gnome Blériot, "Big Bat," and M. Blondeau came

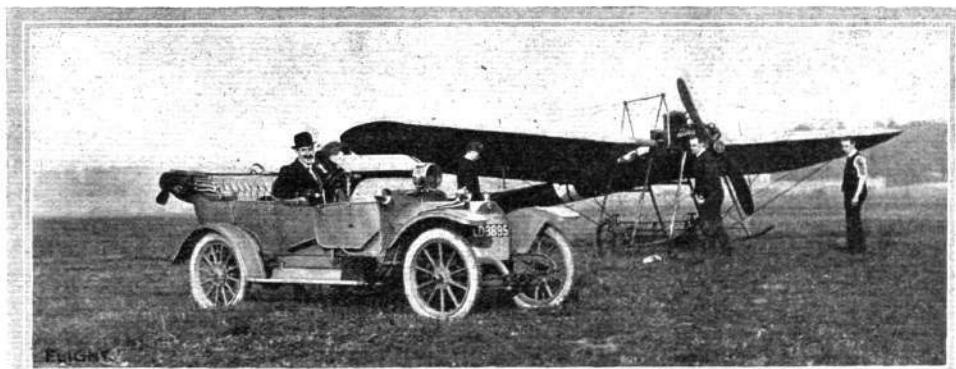
a good second. The first to make an ascent was Mr. Keith Davies on Mr. Thomas' Hanriot, but unfortunately owing to magneto trouble he was only aloft for ten minutes, which, however, secured him the third prize.

Shortly after two o'clock Mr. Graham Gilmour gracefully rose into the air, and was followed half-an-hour later by M. Blondeau, who had been delayed owing to his engine refusing to start. Mr. Macfie then made a flight of 7 mins. duration, while Mr. Spottiswood on "Avis III" flew for 4 mins.

Mr. Gilmour gave quite a spectacular exhibition, rising to an altitude of over 1,000 ft., and several times leaving the aerodrome to fly over Weybridge and the surrounding country. After 2 hrs. flight he was obliged to descend for oil and petrol, but almost immediately rose again, remaining aloft for 50 mins.

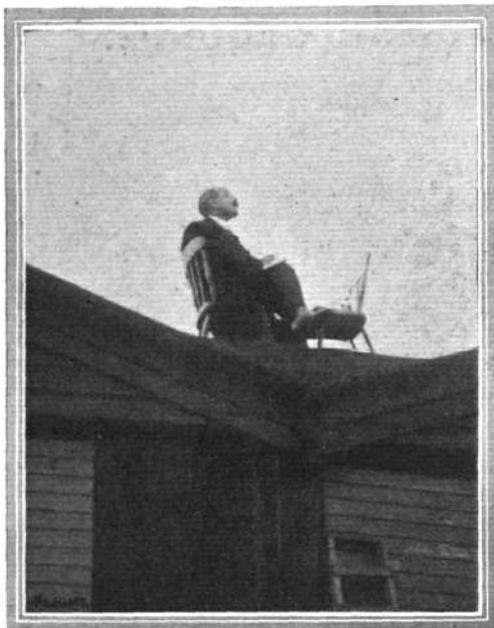
Blondeau was flying for 2 hrs. 22 mins. but did not attain such an altitude as Mr. Gilmour. He, too, came down for oil, little realising that another half lap would have secured him Mr. Neill's cup for aggregate distance, which Mr. Gilmour, as stated in our last issue, won by 6 sec., capturing also the first prize offered by the Brooklands Racing Club, Blondeau taking second prize, and Mr. Keith Davies, as before mentioned, third prize.

Good British aviators are now multiplying rapidly, and we shall no doubt see them shortly flying some of the really capable and



"Flight" Copyright.

MR. A. C. THOMAS IN HIS MOTOBLOC CAR AT BROOKLANDS AVIATION GROUND. Behind is Mr. Thomas' Hanriot monoplane fitted with E.N.V. engine.



"Flight" Copyright.  
Mr. A. G. Reynolds timing the flyers at Brooklands for the Neill Cup Competition.

well-built British machines instead of pinning their faith entirely to the foreign-made article. We hear rumours of a "Lady-bird" who is to be seen flying in the early morning on her Farman biplane, and that the progress made promises well for our first British lady aviator.

Thursday, October 6th, saw the usual flying by those whose machines were in working order. Several of Lane's pupils made straight flights on the Lane Blériot, and it is interesting to note that those who first gained some experience by gliding mastered the control of the machine with greater ease than others who had not done so. Mr. Macfie made several circuits, and successfully carried a passenger. Pecquet, on the Humber Blériot, was flying for a few minutes, but came down owing to engine trouble. M. Blondeau was out and taking up passengers, Mr. Gilmour carrying amongst others a cinematograph operator, quite a lad, who must, if it was his first flight, have found it a trying experience. Pecquet was aloft for 10 mins. on the Howard Wright biplane, which was showing good form with its 60-h.p. E.N.V. engine. On Friday, in spite of a strong wind, Blondeau made several trips on the Macfie and Lane's Blériot, the latter completing its first circuit.

Sunday, the 9th, although the weather was nearly ideal, saw very little done. Mr. Humphrey brought out his big monoplane for the first time since its smash some time back. It has now a chassis, on the lines of the Avis and Pointer machines. Unfortunately, owing to the wheels not tracking, it came to grief. After running about half a mile at good speed, the machine suddenly swerved to the right, and one wing touched the ground and completely collapsed. The aviator was unhurt.

Monday saw the Howard Wright biplane making short trips with passengers, and the Bristol biplane was testing its new Gregoire engine, but on the whole, following the meeting, the week has been a quiet one.

The terrible fall and sad death of Capt. Matziewitch, in St. Petersburg, recalls the fact that it was he who accompanied the President of the Comité de la Flotte Aérienne of Russia when they visited Brooklands less than two months ago on behalf of the Russian Government, to inspect British machines. Capt. Matziewitch found they compared most favourably with the Continental machines, and he had had every opportunity of judging.

#### New Forest Aviation School.†

NOT much has been taking place at Beaulieu for the past few days, several of the pupils being away from one cause or another, and the only notable progress to record is that of Mr. Barrington



"Flight" Copyright.  
Mr. Davies, one of the new flyers at Brooklands, on the Hanriot monoplane.

Kennett, who has made some excellent straight flights up to a distance of half a mile. His first experiment at turning, however, was not attended with success, for banking over rather steep, the machine came down sideways, his nearness to the ground not allowing sufficient time or space for righting, and consequently a somewhat complete smash ensued. The pilot was entirely unhurt, and did not seem at all disheartened by the mishap, which he laughingly attributed to "excessive ambition."

Applications from prospective pupils come in almost daily, and amongst others who are shortly to commence instruction at Beaulieu may be mentioned Mr. Kempton Cannon, the one-time famous jockey. Visiting the school last month he was taken for a good flight by Mr. Drexel in the double-seater, and on his return to terra-firma he exclaimed: "Winning the Derby on St. Amant and that trip are the two finest experiences I've ever had, and I don't quite know which to put first!" He is a keen tobogganer, and has designs on the Championship of the Cresta, but declared the sensation of flying to be more exhilarating than breaking records on that famous St. Moritz run.

Mr. Drexel has gone to America to compete at the New York meeting and in the American Eliminating Trials for the Gordon-Bennett Cup, in which, if he succeeds, he will, of course, be one of America's three selected representatives. McArdele is chosen by the R.Ae.C. as first reserve for England, and will also compete at the meeting. They are expected to return to Beaulieu by the middle of November, until which time the School will continue just the same in charge of Mr. Harry Delacombe.

#### Flying at Hendon.

A FINE flight was made at Hendon on Monday by M. Prier on his Blériot monoplane. Rapidly rising to a height of about 1,000 ft., he flew over the surrounding country for some time, and was only compelled to descend at the end of 1 hr. 21 mins. through his petrol supply giving out. Several other short trips were made.

There was a fair crowd of visitors at the aerodrome on Saturday last, when Prier made a number of short flights and displaying the art of *vol plané*. He was also flying for an hour on the previous Thursday. Each day for the past week or more Mr. Barber has been out on the Valkyrie monoplane. Flying, however, has now been indulged in, as a long series of experiments have been conducted with a view to thoroughly testing the stability of the machine. On occasions, however, Mr. Barber has operated the elevating plane and demonstrated the flying capabilities of this novel machine.



# The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

## Committee Meeting.

A MEETING of the Committee was held on Tuesday, the 11th inst., when there were present:—Mr. John Dunville (in the Chair), Mr. Griffith Brewer, Mr. Ernest C. Bucknall, Col. J. E. Capper, C.B., R.E., Mr. Cecil S. Grace, Mr. F. K. McClean, Mr. J. T. C. Moore-Brabazon, Mr. C. F. Pollock, Sir Charles D. Rose, Bart., Mr. Stanley Spooner, and Harold E. Perrin, Secretary.

**New Members.**—The following new members were elected:—

Miss Mirrie de Cordova.	Henry Ichenhäuser.
C. H. Gray.	Dr. Hastings Stewart.

**Aviators' Certificates.**—The following aviator's certificate was granted:—

22. Edward Keith Davies.

The request of the Aero Club de France to grant Aviators' Certificates to Charles Robert d'Esterre and Capt. C. J. Burke was sanctioned.

**Conference of the Federation Aeronautique Internationale.**

—The questions to be raised by the various countries were discussed and the views of the Committee will be placed before the delegates at the meeting to be held on Monday, October 17th, 1910, at 4 p.m.

The Bristol and West of England Aero Club have nominated Mr. G. Stanley White as their delegate in place of Mr. Sidney Smith.

**Association.**—The Association Agreement with the Manchester Aero Club was ordered to be signed.

**Baron de Forest £4,000 Prize.**

Intending competitors for the above prize are again reminded that it is necessary to give one month's formal notice of entry. In addition to the rules already published, the following special regulations must also be observed:

a. Competitors must have their machines ready for examination as soon as possible after sending in their entries. In the event of any alteration being made after the examination such alteration must be at once notified to the Secretary.

b. Competitors must, before starting, produce a certificate from the maker certifying that both machine and motor are of British manufacture in accordance with the rules.

c. The complete machine must be examined before the start and the competitor must give a written undertaking that such machine complies with the regulations.

d. Competitors will be required to pay the out-of-pocket expenses of officials in connection with the verification of the machine and the observing of the start. A deposit of £10 must be paid prior to the verification of the machine, and any balance after payment of the expenses will be refunded the competitor.

**Rolls Memorial Fund.**

Members who have not yet sent in their contributions to the above Fund are requested to do so as early as possible. By limiting individual subscriptions to the sum of 10s. the Committee hope they will receive the support of all members.

**PROGRESS OF FLIGHT ABOUT THE COUNTRY.**

**Note.**—Addresses, temporary or permanent, follow in each case the names of the clubs, where communications of our readers can be addressed direct to the Secretary. We would ask Club Secretaries in future to see that the notes regarding their Clubs reach the Editor of FLIGHT, 44, St. Martin's Lane, London, W.C., by first post Tuesday at latest.)

**Birmingham Aero Club (165, HAMPTON STREET).**

THE attempt to win the £5 offered for a model flying across the reservoir at Edgbaston at a selected point brought out 23 competitors on October 8th. All the models lacked any kind of directional control (in spite of the absence of wind), and as soon as launched described beautiful circles over the lake, carefully avoiding the shore, and finished in the water. Many must have traversed at least five to six hundred yards before coming to rest. The best attempts were made by G. P. Bragg-Smith, F. Rogers, and C. Davies, all of London, and J. Sims, of Derby. Mr. F. Rogers came within a yard of winning.

Mr. E. E. Noble won the consolation prize (46 secs.) for a flight over land with the rescued models.

The test was exceptionally severe, and the sportsmanlike spirit shown by the competitors was very praiseworthy. The prize is on offer for any future trial, and will be doubled if not won before next summer.

**Conisborough and District Model Ae.Soc. (18, CHURCH ST.).**

THE model aviation meeting, held on Saturday last, resulted in a complete success. The afternoon was fine and warm without any wind, and therefore the competitors had a unique opportunity for fine flying. Three of the competitors are members of the Sheffield Aero Club and the other two are members of the Conisborough Society. A demonstration with a cycloplane had been arranged, and in the morning the machine ran into a wall and smashed its

planes. It was also necessary to postpone the competition for members under 17, owing to lack of entries. This competition, however, is still open, and will be held as soon as sufficient entries are received.

After the flying was over a sensation was caused by an announcement that Mr. Cotterill's model had flown at a speed of 40 m.p.h., probably a record for a model. The flight, which was one of 236 ft., was timed by stop-watch, and was found to have been of 4½ secs. duration. Circular flights of well over 1,000 ft. were made, passing over Doncaster Road, a neighbouring football field, houses in Park Road, and back over the aerodrome. One model completed this twice without landing.

The judge was Mr. A. V. Kavanagh, President of the Sheffield Aero Club, who also presented the prizes at the close; while Mr. J. I. Webster acted as clerk of the course, and Mr. C. Ledger was the recorder of distances. The following were the results:—

Longest Flight—1. Mr. C. W. Cotterill, 488 ft.; 2. Mr. D. Oliver, 300 ft.; 3. G. Askew, 190 ft.

Circular Flight—1. G. Askew.

Landing Nearest Given Point, 60 ft. from start—1. C. W. Cotterill, within 2 ft. 7 ins.; 2. G. Askew, 6 ft.; 3. D. Oliver, 10 ft.

Stability while Flying—1. J. E. Greathead; 2. G. Askew; 3. C. W. Cotterill.

Aggregate Result—1. G. Askew, 65 marks; 2. C. W. Cotterill, 60 marks; J. E. Greathead and D. Oliver, 25 marks each.

#### Manchester Ae.C. (Model Section) (52, MANSFIELD CHAMBERS).

A LECTURE was given on Saturday last in the Manchester Technical School on "Model Wing and Propeller Construction," by Mr. W. P. Dean, of Urmston. In describing the construction of model wings, the lecturer dealt with the following types of wings:—Scale models of the large present-day machines, showing how to obtain the correct camber of the wings by a wood template; light wood framed aerofoils; wood aerofoils and wire-framed aerofoils. The last two types were dealt with very fully, as the lecturer claimed they were the best and easiest types to make. The lecturer then went on to explain the methods of making propellers, describing fully how to make the following types:—Steamed propellers, curved and laminated propellers.

Mr. Dean very kindly brought down several wings and propellers in various stages of construction to illustrate his lecture.

To-day (Saturday) Mr. Richards will give a paper on "Scientific Model Construction."

#### Midland Aero Club (GRAND HOTEL, BIRMINGHAM).

ARRANGEMENTS are being made for the annual meeting of members to take place on November 4th, when the Lord Mayor of Birmingham, Alderman W. H. Bowater, will take the chair, and the Officers and Council will be elected for the ensuing year. During the evening Captain J. H. Cooke will give a lecture entitled "An Historical and Descriptive Account of the Progress of Human Flight." This discourse will be illustrated by bioscope and lantern pictures. The winter session opens on Friday next, when Mr. J. T. C. Moore-Brabazon will give a lecture entitled "Current Topic on Aeronautics." So far three other lectures have been



## COL. CAPPER, C.B., ON THE FUTURE OF FLIGHT.

In an interview with the representative of a daily contemporary, Col. Capper has expressed himself in no half-hearted manner in regard to the future influence of aeronautics upon the affairs of the world. Probably no one has more authority for speaking upon such a subject than Col. Capper, and it is to be hoped his "look ahead" will be taken to heart by those at the head of the British nation, whatsoever may be their politics. Speaking of reconnoitring, Col. Capper states:—

"For successful reconnoitring the higher one is, within limits, the better one sees. It is now definitely laid down that the height at which a dirigible balloon should work in the daytime in clear weather is between 5,000 and 6,000 ft. At this height it is practically secure from all artillery fire except that of special guns designed on purpose to fire on airships. From these it can, at no height, be immune. But whether or not it is an easy mark for such a gun only experience can show."

"As regards aeroplanes, their smallness and the difficulty of seeing them must make them a most difficult target for artillery at any height above 3,000 ft., and the rapidity with which both they and the dirigible balloon can move away, when threatened, renders the problem of attacking them from the ground one before which even the most expert gunner might well hesitate to claim a successful solution. From heights of 3,000 to 6,000 ft., objects which form the subject of military reconnoitring are very easily discernible, in

arranged, one on November 18th, by Col. J. E. Capper, C.B., on the "Military Aspects of Aeronautics and Work for Dirigible Balloons." On January 20th, Mr. H. Massau Buist will read a paper on "Competitions for Aeroplanes, their Past, Present and Future," and on March 10th, Mr. E. T. Willows will take as his subject "My Dirigibles." Two other dates which should be noted are December 9th, when a club dinner will be held, and January 10th, for which a smoking concert has been arranged.

#### Paddington and Districts Aero Club (2, EDBROOK ROAD, W.).

The following is the programme for the model meeting on October 29th. Entries close first post on the 24th inst.:—  
 1. Longest flight by any model under 2 ft. 6 ins., open to all comers, 3 flights, best one counts.  
 2. Longest flight by any model under 2 ft. 6 ins., open to members only, 3. Longest flight by model over 2 ft. 6 ins., open to all comers, 3 flights, best one counts.  
 4. Longest flight, members only.  
 5. Longest flight by model made by any comer under age of eighteen.  
 6. Best circular flight round mark post, judged by stability, steering, and best flight all-round.  
 7. Longest flight by any purchased model, all comers.  
 8. Point-to-point race, judged by machine completing course in fewest number of flights.  
 9. Point-to-point relay race.  
 10. Best flight by petrol-driven model.

#### Sheffield & District Ae.C. (22, MOUNT PLEASANT RD., SHARROW).

A GENERAL meeting was held on the 5th inst. A library has now been formed, and the thanks of the club are due to Mr. Alexander for a large number of the books contained therein. Mr. Heeley will officiate as librarian.

Glider practice and a model competition will be held this (Saturday) afternoon, at the Gliding Ground, Tinsley. Every assistance is needed for the successful manipulation of the glider.

The next general meeting will be held at the club's works, 26, Paradise Street, on Wednesday evening, 19th inst., at 8.30 p.m., when members will be able to inspect the aeroplane parts which were presented to the club by Mr. Beckett. All members are particularly requested to make an effort to attend.

#### Women's Aerial League (227, STRAND, W.C.).

UNDER the auspices of the League, a meeting was held at the Farnham Corn Exchange on Tuesday week, when Col. J. E. Capper, R.E., gave an address. He said the apathy of the English people to the whole subject of the conquest of the air was extraordinary, and in his opinion they did not realise what it meant to them as a nation. For the last seven years he had made a special study of the subject from a military point of view, and he was convinced that it was absolutely necessary for the safety of the country, if not to take the lead, to be well to the fore in the conquest of the air. After referring to the great enthusiasm for aviation abroad, he went on to say that before many years had passed aviation as a means of locomotion would be common, and all wars would begin with the conquest of the air. He could not say whether it would eventually lead to the brotherhood of men, but it might result in making war so dreadful as to eventually make for the peace of the world.



fine weather, to a distance of three or four miles on either hand." Continuing in regard to the time to come, Col. Capper speaks as follows:—"I look upon the whole of the science of movement in the air as being even now in its earliest infancy. Machines of to-day, compared with those of twenty years hence, will probably be as out of date as the old wooden battleship when compared with our modern Dreadnoughts. Twenty years hence we shall have machines capable of taking the air and landing safely at any desired spot in practically any weather. Present speeds will be very greatly increased. I look upon a speed of 100 and 120 miles an hour by aeroplane as by no means improbable. Dirigible balloons are not, however, likely to exceed speeds of more than half that."

"What will the result be on international intercourse and warlike operations? It is impossible to say. But there is no doubt now that the conquest of the air is to cause as great a revolution as did the introduction of gunpowder and steam. I think it quite likely that airships will be able to ride out gales before which even a cross-Channel mail packet would hesitate to put to sea."

"The necessity has now arisen for every warlike nation to have a sufficient aerial fleet, armed and equipped for offensive warfare. The duty of such a fleet will be to put out of action the enemy's aerial forces before it can carry out its proper rôle of reconnoitring over the enemy's country or in attacking vital points of communication."

## BRITISH NOTES OF THE WEEK.

### Profits at Burton Flying Meeting.

FROM a financial statement, issued by the Aviation Committee of the Burton Corporation, in connection with their recent flying meeting it is seen that the surplus amounted to £190. The receipts totalled £2,250, and after paying £1,210 to the aviators there were various local expenses to be met, which left the balance already mentioned.

### Lanark Aviation Meeting.

THE deficiency between receipts and expenditure in connection with the Scottish aviation meeting held at Lanark last August having amounted to £8,750, a call on the guarantors will be necessary to the extent of 14s. in the £. The amount of the guarantee fund was £12,500.

### Flying from Liverpool to Southport.

FOR some considerable time Mr. H. G. Melly, of Liverpool, has been experimenting with a Blériot monoplane on the flat stretches of sand at Formby, near Liverpool. On Monday last he succeeded in making a very satisfactory cross-country trip to Southport.

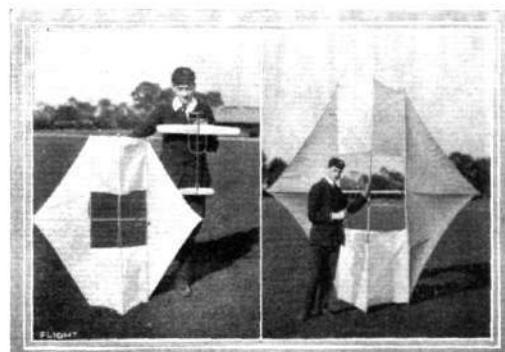
### A Mishap to Mr. Ferguson.

THOSE who have watched with satisfaction the good progress made by Mr. Harry Ferguson on his Irish monoplane at Magilligan Strand, will extend their fullest sympathies to him and hope that he may soon recover from the injuries sustained during his accident on Tuesday evening. He had made a very good trip along the Strand, and was returning to his starting point when the machine was caught by a gust of wind. Mr. Ferguson quickly had the machine on an even keel again, but was unable to prevent it striking the ground very heavily. He was thrown from his seat by the force of the impact and rendered unconscious, being badly cut and bruised about the face, limbs and body. Fortunately a doctor was quickly at hand, and the latest reports indicate that Mr. Ferguson will soon be about again.

### Progress by Mr. George.

ON Thursday of last week Mr. A. E. George made several good flights on the biplane of his own design in Gosforth Park, Newcastle. On Friday Mr. George was not so fortunate and met with two mishaps. The first one was quite a minor affair, through a collision with some wooden rails, and after an hour's operation the machine was once more in flying order. The

motor was started, and at the word to "let go," after a run of about 150 yards, the machine rose steadily in the air to a height of about 60 feet. It had covered a distance of about half a mile, and Mr. George was making a wide sweep in order to get back to his shed, when he struck an "air pocket." This caused the machine to drop suddenly, and on striking the ground it ran along the golf course for some little distance, until coming into a bunker the machine capsized. Mr. George retained his seat and was unhurt, but the propeller was



C. K. Scarfe and his prize-winning "Scarfe" kite, No. 1, at the Wimbledon Competitions on Saturday week.—On the right is Crawford Griffiths, with his "Radley" kite, No. 4.

smashed and the landing chassis of the machine considerably damaged. The biplane was towed to its shed by motor cars, and Mr. George, after surveying the damage, stated that it would not be long before he had the repairs completed and the machine once more in the air.

### Two More Naval Airship Appointments.

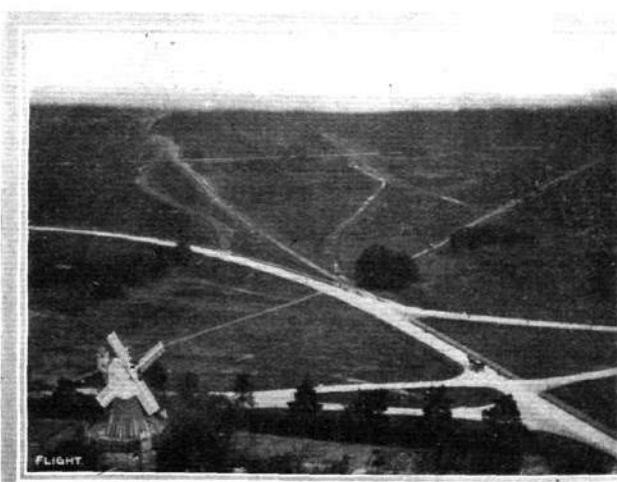
DURING the past week two further appointments to H.M.S. "Hermione," in connection with the Naval airship now building at Messrs. Vickers' works at Barrow, have been officially announced by the Admiralty. Capt. Murray F. Suter has been appointed Inspecting Captain of Airships, and Commander Edwin H. Edwards will be assistant to the Inspecting Captain of Airships.

### Artistic Advertisements.

To attract the eye of the public the wise advertiser serves up his wares with some distinctive "sign" which insists upon attention and often also tells the buyer the nature of the goods literally at a glance. When this takes an artistic form it is all the more telling. Some examples of what can be done in grafting art on to commerce in this direction have reached us from Mr. Charles E. Dawson, whose studio is at Naphill, Bucks. His designs are bold and suggestive, and, moreover, being personally much concerned in aeroplanes, having already constructed several full-sized man-gliders, his clever work should particularly appeal to the many firms who are now coming forward on the commercial side of flying. Mr. Dawson's work should help many an advertiser to further his own interests.

### Flying Visits to Paris Aero Show.

IN connection with the Paris Aero Show, which opens to-day (Saturday), the South Eastern and Chatham Railway are issuing special excursion tickets for those who wish to visit the Show during the week-end. Leaving Charing Cross at 9 p.m. on Saturday night the passengers arrive in Paris early on Sunday morning; can spend the day at the Show, and return by the train which leaves Paris at 9.15 p.m. on Sunday night. The fares are 20s. third class and 45s. first class.



KITE PHOTOGRAPHY.—This interesting photograph of the windmill and surroundings on Wimbledon Common was taken during the Kite-Flying Association's Meeting on October 1st by the aid of the Gamage automatic camera carried on one of their kites, as seen in our photo on page 821 last week. It is a good example of the interest that attaches to the combination of the pastimes of kite-flying and photography.

## ROUND-ABOUT FRENCH NOTES.

By OISEAU.

ON Saturday last Messrs. de Lesseps, Latham, Aubrun, and Simon sailed from Le Havre on the "La Lorraine" for New York to take part in various aerial contests during the next month, chief of which is the Coupe Gordon-Bennett. It is understood that the vacant place in the French team will be filled by M. Aubrun, who will thus be again in competition with his opponent of the Circuit de l'Est. The French are confident that provided nothing unforeseen happens to the machines the cup will be taken by either M. Leblanc or M. Aubrun, both of whom are flying in the new 100-h.p. Gnome-engined Blériot. Beautiful in construction and perfect in flight though the Antoinette may be, it is outclassed as to speed by the Blériot, even allowing the accuracy of the reports of the speeds attained by M. Latham last week on the 100-h.p. 16-cyl. Antoinette he is taking to America.

The results will doubtless be more interesting than the Circuit de l'Est, as all the competitors have had an equal chance of preparing for the race and a larger time for such preparation.

There are conflicting accounts of the cause of the accident to the two Moranes in their attempt to fly to the summit of the Puy-de-Dôme last week, but I should certainly prefer to accept the pilot's own version to that of any interested outsider. He says that one of the gauchissement wires broke, and made it impossible for him to control the machine. This accident provides an argument against excessive increase of speed in the present stage of aviation. Had M. Morane been piloting a slower machine with a greater wing curvature he might, by the ordinary process of steering, have regained his lateral balance after the fashion of the cellular type Voisin. The great speed at which he was flying made this manoeuvre quite impossible. However, one is glad to be able to say that both the brothers show every sign of recovering completely from their accident, though I am afraid their flying career is at an end.

As one of the leading London papers has quoted a paragraph of mine dealing with the necessity of caution in doing business in France, and as I am afraid it might be misread into a condemnation of French business methods in general, I should like to qualify it a little. In every country there is a class that has its own subtle methods of extracting money from the guileless foreigner, and it is of that class I wrote. I should not like it to be thought for one moment that I was giving my opinion of the Frenchman as a class.

One hears so many stories in England of how Englishmen intending to fly have been deterred in every way by the unsportsmanlike French. It is said that delivery of any engine or spare part is delayed considerably when it is known that the purchaser is English, and that the Frenchman is always given the precedence in matters of urgency. Nothing is, perhaps, less true than this statement. To quote my own experience, I can only say that, during a stay of many months in France, I have been treated with the utmost courtesy and have had every facility placed in my way by the French sportsman. The success of an Englishman in France is always treated with enthusiasm by the French people, high and low, and I have found here a much warmer appreciation of the virtues of the English than I am afraid my countrymen have of the French. The performances of English aviators are looked on quite dispassionately here, and are admired without one touch of jealousy. When Drexel created a new height record at Lanark he was honoured by headlines in the Parisian papers quite as large as those relating the feats of Latham or Morane, and perhaps that is the best method of judging public opinion.

On Saturday of this week the second Salon de l'Aviation opens in the Grand Palais, but this year it is the exhibition of a science with records to look back upon, as well as a hopeful future. For the first time, constructors will be able to relate calmly what they have done, and it will not be quite so necessary to ask the aid of a wonderful imagination in telling the prospective client of the things to come. The progress in the brief period of two years between the two Salons has been astonishingly rapid. The man with the hand of scorn will have no place this year, for the day is now gone when feeble jokes on the impossible nature of mechanical flight can be popular. More rapidly than any other means of artificial traction has the aeroplane come to a firm position. Methods of construction may still be imperfect, engines may still be unsatisfactory, but the main principle is right, and the roads of advancement are clearly defined.

As the Salon is so close, I shall leave the descriptions of three new engines, the Rossell-Peugeot, the Velox, and the Lemale, to my Show report.

I hope to be able to give some particulars shortly of Mr. Henry Farman's experiment with a monoplane type of machine.

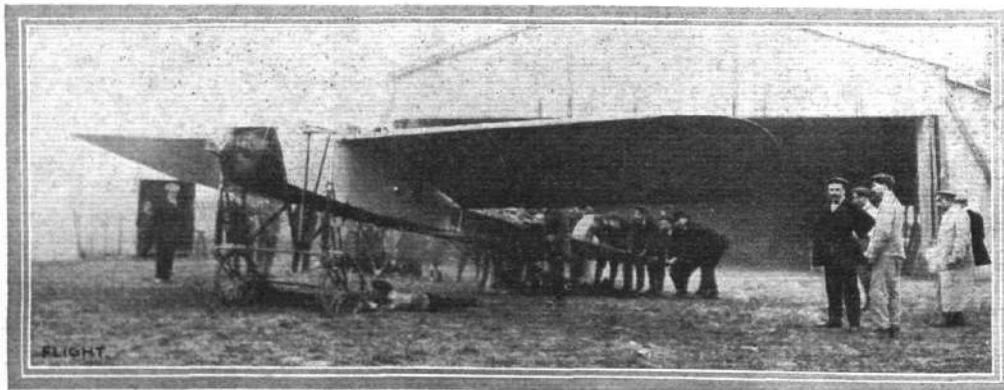


## FOREIGN AVIATION NEWS.

## The Mishap to the Morane Bros.

IN our last issue we were just able to mention the abortive attempt by Leon Morane, accompanied by his brother, to fly from Issy to the Puy-de-Dôme. Although both the brothers were seriously injured, they were not so bad as at first reported, and the latest advices from the hospital state that they are now out of danger and progressing satisfactorily. Leon Morane had his right leg

broken in two places, while his brother sustained a fracture of the left leg and dislocation of the hip. Up to the present the cause of the accident has not been definitely discovered, but Leon Morane gives it as his opinion that one of the steering wires broke, while Mons. Blériot himself, after examining the machine, stated that he thought the accident had been caused by a spare tin of petrol shifting its position and jamming one of the wires.



Start of M. Leon Morane and his brother from Issy last week on the 100-h.p. Gnome-engined Blériot for the Michelin Prize, which ended in the serious accident soon after the start. Note the four assistants on the ground helping to hold back this very powerful flyer.

**A Royal Monoplane.**

TRIALS are being made at Rheims by a Russian prince with a special Hanriot monoplane which he has had built. It is painted in white and gold, and fitted up in a luxurious manner, similar to the boats attached to the royal yacht. Some very satisfactory flights have been made, and the royal owner has declared his intention of flying from Brussels to St. Petersburg.

**French Poet's Taste of Aviation.**

AMONG the visitors to Mourmelon on Sunday last who were gratified with a flight by the side of Mr. Henry Farman was Anatole France, the well-known French poet-novelist. The trip was made on a biplane of military type, and on landing Anatole France declared that he was enchanted with the trip through the air. A few days previously Edmond Rostand was visited at Biarritz by Tabuteau on his Maurice Farman biplane. Much to the gratification of the distinguished French dramatist and his family, Tabuteau made several fancy flights over and around the mansion.

**Buc at Chartres and Back.**

LEAVING the Buc flying ground on his Maurice Farman machine on Saturday last, Lieut. Bindé arrived safely on the military parade ground at Chartres, 75 kiloms. away, 50 mins. later. After a stop of about two hours he remounted his machine and was back at Buc in ten minutes under the hour. During the day Maurice Farman flew over Satory, in order to make a demonstration flight with Capt. Eteve, the well-known French Wright expert. After a satisfactory trial flight with this officer, Mr. Farman returned to Buc by way of the air.

**Bruneau de Laborie Makes an Offer.**

IN connection with the proposal in France to develop aeroplanes for transporting mails across desert countries, M. Bruneau de Laborie, who, by reason of having lived for a long time in the tropics, is well acquainted with the conditions, has offered to place himself and his machine at the disposal of the French Government for an experimental aerial mail service in the Sudan. This offer has been laid before the French Minister of Colonies for his consideration.

**Herbster Goes to Buc.**

ON Sunday last Herbster, who has for some considerable time been one of the instructors at the Henry Farman schools at Etampes,



M. Leon Morane (on right) and his brother, who accompanied him as passenger in connection with the unsuccessful attempt last week to win the Michelin Prize for the flight from Paris to the Puy-de-Dome.

was over at the Maurice Farman school at Buc giving instructions to the pupils there. During the afternoon the attention of the pupils was distracted for some time by watching the evolutions of a Wright biplane over the aerodrome.

**Laurens Flies for an Hour.**

SOME very satisfactory flights have been made during the past week by the new R.E.P. pilot Laurens, and on Sunday last he was flying for an hour at a good height. This would suggest that M. Esnault-Pelterie has at last got over his minor difficulties in connection with his monoplane.

**A Splendid Farewell Flight.**

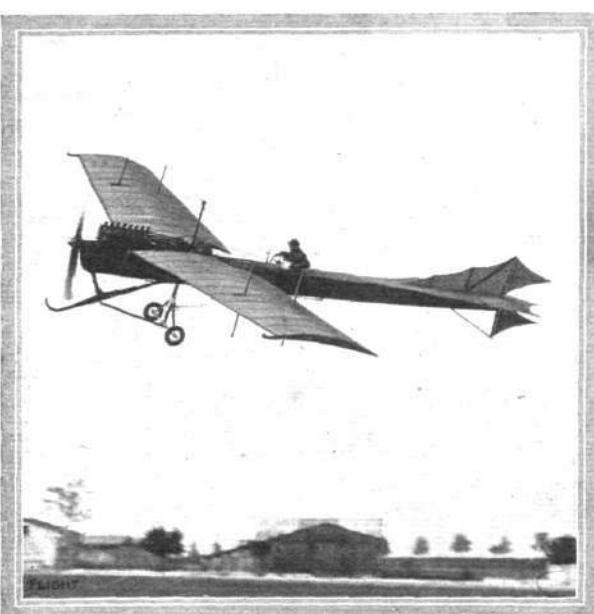
By way of making a farewell flight at the Blériot School at Etampes, where he has learnt to manipulate one of these monoplanes, Depireux, on Saturday last, was flying over the aerodrome and the surrounding country for an hour and a half, his average altitude being about 800 metres. Lemartin, another very successful pupil, made two trips of 25 mins. each, and Mlle. Jane Hervé covered several laps of the course at a fair height. In addition a number of the other pupils were taking lessons.

**An Austrian Monoplane at Issy.**

DURING the past few days the monoplane colony at Issy has received a notable addition in the shape of an Etrich monoplane belonging to M. G. Aimar, with which the owner has made one or two short trials. The machine so far has shown itself as being very easy to handle.

**Another New Monoplane at Issy.**

ISSY still continues to be the favourite testing ground for monoplanes, one of the latest to put in an appearance being the Thomann rigid monoplane built at Neuilly. During the trial flights it is being piloted by Gallier, who has made several good trips, including one on Friday last of a quarter of an hour's duration.



M. Latham flying at Chalons on the monoplane fitted with a 16-cyl. 100-h.p. Antoinette motor, and specially built for the Gordon-Bennett Aviation Cup Race. With this M. Latham is credited with having attained a speed of 110 k.p.h.

**Antoinette School at Mourmelon.**

THE Antoinette monoplane still appears to find a great deal of favour among budding aviators, judging from the fact that the two instructors Laffont and Gobe have been kept continually busy giving lessons during the past week or so, one of the most notable of the pupils being the Prince of Orleans, who is making very good progress. On Sunday a military commission visited Chalons camp and witnessed a demonstration of flight lasting twenty minutes by a naval officer, Lieut. Lafon.

**Robert Delagrange an Hanriot Pilot.**

ON Saturday Mons. Robert Delagrange paid a visit to the Hanriot School at Rheims, and made his first flight on one of the three new Hanriot machines which he has purchased. On another them, when tested, Vidart was timed to attain a speed of over 80 kiloms. an hour.

**Doings at the Hanriot School.**

IN the course of a 35-minute flight at Rheims, on the 5th inst., Vidart piloted his Hanriot machine over Vitry, and at the same time Xavier Martin was flying above the aerodrome, and covered 25 kiloms. in 20 mins. On Saturday afternoon Martin flew over to Mourmelon, making the journey in half an hour. The same day Durafor, Vidart's mechanician, successfully qualified for his pilot's certificate, after only four days' tuition in actual flying.

**Police Regulations in Paris.**

IN consequence of the recent reckless exploits of aviators in landing in and around Paris, M. Lepine, the Chief of Police, has drawn up a series of regulations making it an offence for any aeroplane, dirigible or ordinary balloon to land in Paris or any of the communes of the Seine Department. In the event of any flying machine crossing Paris, it must be kept at such an altitude that in the event of a landing being necessary it may land outside the forbidden area. Should by any chance a machine land in these places it must not start again from there, but be taken outside the district. Also pilots of dirigible balloons are interdicted from throwing out any ballast other than fine sand.

**Paris to London Flight Which Failed.**

LEAVING Issy on Sunday morning on a Blériot monoplane with the intention of flying to London, Mr. Oscar C. Morrison only succeeded in getting as far as Vincennes, but a few miles beyond Paris. When he left the flying ground the sun was shining and the weather conditions seemed good, but he had not long been on his way when he ran into a thick bank of fog and completely lost his bearings. He therefore decided to come down at the first clear spot, and then found he was not far from Paris instead of near Amiens. In landing the machine was slightly damaged, and as soon as the

repairs have been effected Mr. Morrison proposes to make a fresh start for England.

**New Savary Biplanes.**

At the Savary school at Chartres extended experiments and trials are being made with two new machines. One, which is being tested, is provided with two seats, while the other, which has made good flights with its designer, Robert Savary, at the wheel, differs from standard practice in that it has only one propeller.

**From Swimming To Flying.**

AMONG the recent aspirants to flying honours who have taken up their quarters at Issy with a view to learning the intricacies of the new art is Peyrusson, who should find his experience in diving of assistance when making a *vol plané*.

**St. Petersburg to Cronstadt.**

In the gathering dusk of Wednesday of last week, a young naval officer, Lieut. Piotrowsky, mounted his Blériot monoplane and, accompanied by a passenger, set out from the St. Petersburg aerodrome for Cronstadt, about 20 miles away, he making the double journey there and back quite easily. In venturing outside the limits of the aerodrome the officer deliberately disobeyed orders, but probably in view of the brilliance of his effort his offence will be condoned.

On the same day, Efimoff made a flight of 1 hr. 55 mins., while Roudnietz was flying above St. Petersburg and the gulf for 54 mins.

**French Prizes Won Amount to £100,000.**

A NOTE from the treasurer of the Aero Club of France announces that up to date prizes amounting to 2,498,300 francs, or roughly about £100,000, have been won by aviators in events held under the auspices of the Aero Club of France.

**Van den Born to Tour the World.**

AMONG the passengers on the "Ernest Simon," which left Marseilles on Sunday last, was Van den Born, who, accompanied by his wife, is making a trip round the world with the intention of giving flying exhibitions *en route*. He will first stop at Indo-China, and afterwards proceed on through China itself, across to Japan, and from there to North America. He has sent his three machines to different points on his tour so that he may pick them up as he goes along.

**A Gnome-Engined Wright.**

AT the Villacoublay flying ground, on Friday last week, Count Lambert made several satisfactory trial flights with a new French-built Wright biplane which has been fitted with a Gnome rotary motor. Although there was a violent wind, Count Lambert had no difficulty in controlling the movements of the machine, both when flying by himself and when accompanied by a passenger.

**Contesting the French Wright Patent.**

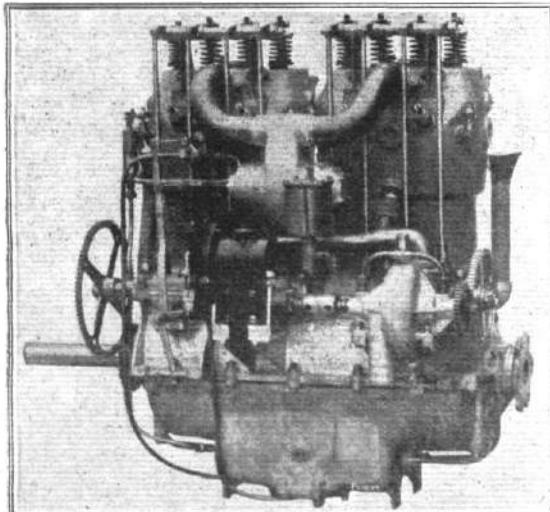
SATURDAY last saw the commencement of legal arguments before the Seine Civil Court in a case undertaken by a group of French manufacturers with a view to getting the Wright patent for warping wings nullified. It is claimed that this system of warping wings was covered by a patent issued in 1900 to Theodore Dobresco.

**Fatal Accident to Capt. Matsievitch.**

THE close of the flying meeting at St. Petersburg last week was unfortunately marred by a fatal accident to Capt. Matsievitch. This Russian naval officer, who on his Henry Farman biplane had been one of the most successful flyers at the meeting, was gliding down after a good flight when suddenly he seems to have turned the machine downwards at too sharp an angle. The aviator was pitched from his seat and instantly killed, while of course his machine was smashed. Capt. Matsievitch only two days previously had taken up M. Stolypin, the Russian Prime Minister, and it had been rumoured that he was to be given the command of the new school of military aeronautics.

**Cross-Country Flying in Austria.**

MOUNTED on his Etrich monoplane Herr Karl Illner succeeded in winning the prize of £800 offered by the Viennese Municipality for a flight from the Austrian capital to Horn in Lower Austria and back again, a round trip of nearly 94 miles. He started in the morning from Semmering Heath, near Vienna, and reached his destination in 1 hour 17 seconds. At 4 o'clock he started back and reached Semmering Heath in 1 hour, the greatest altitude being 2,900 ft. This was the second attempt Herr Illner had made for the prize. He set out originally on the 3rd inst., but had to descend at Krems in consequence of rain. In landing, his machine was slightly damaged, and it was Saturday last before he was able to make his return trip to Vienna and to prepare for the second and successful trip.



**THE NEW MERCEDES MOTOR FOR AEROPLANES.**  
This engine is the work of the Daimler Motoren Gesellschaft of Untertürkheim, and has been secured by Herr Fiedler for his monoplane for use at the Wiener Neustadt Aerodrome.

## MILAN MEETING.

AT the conclusion of the Milan meeting it was found that Cattaneo took by far the largest share of the spoil, his prizes totalling to £1,148, while Fischer, who came next, secured £456, Legagneux £400, Simon £340, and Ruggeron £240. The national prizes for speed and long distance flying were awarded to Cattaneo. Ruggeron secured the Naval Minister's prize, while Cagno took the special prize offered by the Minister of Posts and Telegraphs:—

## Speed (100 knts.).

	h. m. s.	h. m. s.
1. Cattaneo (Blériot)	1 8 51	3. Wiencziers (Blériot) 1 12 42
2. Simon (Blériot)...	1 9 16	

## Height.

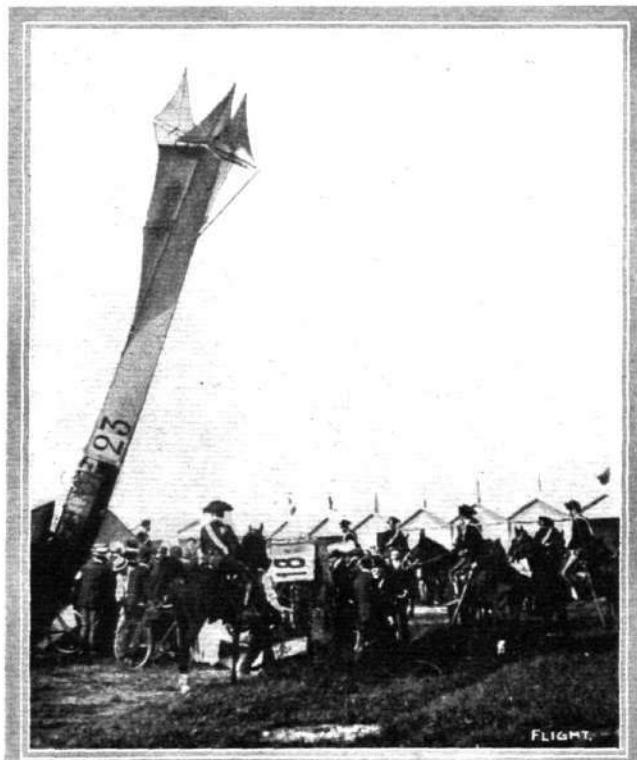
	metres	metres
1. Legagneux (Blériot)	2,050	4. Wiencziers (Blériot) ... 870
2. Cattaneo (Blériot) ...	1,600	5. Brégi (Voisin) ... 610
3. Tyck (Blériot) ...	900	6. Weymann (Farman) ... 390

## Gliding Flight.

	1. Bielovucic (Voisin) ... 34½s.	3. Weymann (Farman) ... 25½s.
2. Bregi (Voisin) ...	25½s.	

## Totalisation Distance.

	kils.	kils.
1. Fischer (Farman) ...	1,222	6. Bregi (Voisin) ... 392
2. Ruggeron (Farman) ...	1,156	7. Kuller (Antoinette) ... 318
3. Cattaneo (Blériot) ...	901	8. Simon (Blériot) ... 274
4. Thomas (Antoinette) ...	792	9. Cailler (Paulhan) ... 250
5. Cagno (Farman) ...	496	



The scene at Milan immediately following the crash to earth of the Antoinette monoplane of M. Thomas and Capt. Dickson's Farman machine. The tail portion of the Farman biplane, showing No. 18, can be seen between the military, the main planes being mixed up completely with the planes of the Antoinette, the tail and body of which is seen standing straight up on end.

10. Legagneux (Blériot), 211 kiloms ; Wiencziers (Blériot), 155 ; Téard (Sommer), 146 ; Robillard (Antoinette), 119 ; Weymann (Farman), 108 ; Dickson (Farman), 92 ; Tyck (Blériot), 91 ; Bielovucic (Voisin), 88 ; Aubrun (Blériot), 54 ; Barra (M. Farman), 33 ; Cheuret (Farman), 26 ; Paulhan (Farman), 19 ; Metrot (Voisin), 14 ; Audemars (Demoiselle), 11 ; Paul (Voisin), 9 ; Paillette (Blériot), 5.

## Mechanic's Prize.

1. Fischer (Farman), 1,000 frs. ; 2. Cattaneo (Blériot), 500 frs. ; 3. Legagneux (Blériot), 500 frs. ; 4. Fischer (Farman), 500 frs. ; 5. Cagno (Farman), 500 frs.



## AMERICAN INTERNATIONAL MEETING.

THE latest advices from America state that the prizes to be offered at the International Flying Meeting which opens at Belmont Park, Long Island, N.Y., on Saturday next will amount to well over £11,000, and it is anticipated that before the opening of the meeting additional prizes will be offered to make the amount well over £15,000. The American Eliminating Trials for the Gordon-Bennett Competition have been fixed for the 26th inst., and the competition itself will take place on October 29th over 20 laps of a 5-kilometre course. The entrants for the American eliminating trials include Curtiss (Curtiss), Hamilton (Curtiss), Brooklands (Wright), J. A. Drexel (Blériot), and Weymann (Farman). The British team consists of C. Grahame-White (Blériot), J. Radley (Blériot), Ogilvie (Wright), with MacArdle as first reserve. The French team is referred to on p. 854. In connection with this meeting the Aero Club of America have issued the following rules, which it is stated will be strictly enforced:—

"First.—All contestants wishing to pass another in front of them must pass to the right at a minimum distance of 75 ft. and the contestant who is to be passed must keep within 100 ft. of the line of the aerodrome—that is to say, the lines that connect the pylons marking the course.

"Second.—A contestant who wishes to pass another shall follow the rules above stated, but shall not fly above or below his competitor. He may not pass below a contestant unless such contestant is at least 150 ft. above the ground. If the contestant who is to be passed is less than 150 ft. above the ground, the contestant desiring to pass may, as stated above, fly to the right at a minimum distance of 75 ft., or pass above him at a height of not less than 150 ft. This means that no machine may be passed either above or below except that the passing machine shall be more than 150 ft. away.

"Third.—Aviators are advised that when between two machines one machine tries to pass another, the one trying to pass shall pass to the right. If they are close together at a curve or when nearing it, it is necessary that the aviator nearest the line must follow it closely, and must not crowd toward the exterior the contestant who is trying to pass him. The two aviators should take all care to avoid any accident.

"Fourth.—At all times a machine flying the course should travel in the direction opposite to that of the hands of a clock—that is, leave the towers on the left hand—and it is positively forbidden for a machine to fly at any time counter track—that is to say, in the direction of the hands of a clock even though they be over the centre of the field bounded by the posts that indicate the track.

"Fifth.—A machine after landing for any reason within the infield, on the way to its shed, must cross the track as quickly as possible in the most direct line from the centre of the field and only after making sure that it will not be in the way of any other aviator.

"Sixth.—Aviators are forbidden to fly over the public and above the stands.

"Seventh.—All violations of these rules will subject one to penalty in accordance with the rules of the Federation Aeronautique Internationale. In the event of a second abuse the aviator may be disqualified from participating further in the meeting."

# BRITISH FLIGHT ENGINES.

## THE 8-CYLINDER E.N.V.

### Leading Particulars.

#### 60-h.p. Type.

*Cylinders.*—8; bore, 105 mm.; stroke, 110 mm.  
*Weight.*—287 lbs., including all accessories, with the exception of the radiator.  
*Power.*—Guaranteed to develop 80-h.p. at 1,500 r.p.m. for 5 hours.  
*Fuel Consumption.*—6 pint petrol per horse-power per hour.  
*Price.*—£450 complete.

#### 40-h.p. Type.

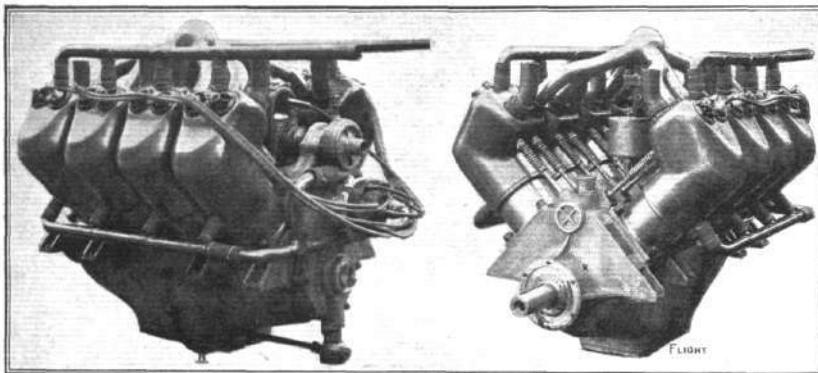
*Cylinders.*—8; bore, 85 mm.; stroke, 90 mm.  
*Weight.*—155 lbs., including all accessories, with the exception of the radiator.  
*Power.*—Guaranteed to develop 50-h.p. at 1,400 r.p.m. for 5 hours.  
*Fuel Consumption.*—6 pint petrol per horse-power per hour.  
*Price.*—£350 complete.

Now that the E.N.V. engines are actually being constructed in this country, they will doubtless have an even enhanced interest to patriotic aviators at home, although, truth to tell, the motors in

The eight-cylinder E.N.V. engines are of the vee type, having their cylinders arranged in two rows of four, which are inclined to one another at right angles. Among the characteristic features in the construction of these engines may be mentioned the use of electrolytically deposited copper water-jackets, ball bearings for the support of the crank-shaft and a forced feed system of oil circulation, wherein the gudgeon-pins as well as the big-ends are lubricated by the direct service of the pump.

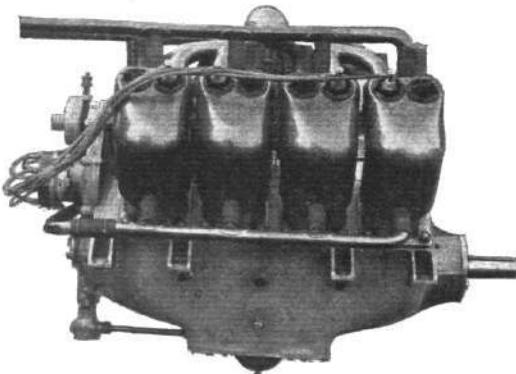
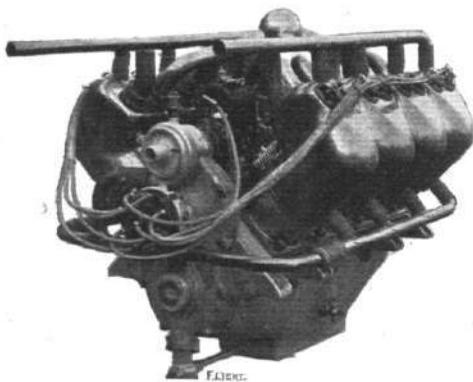
Each cylinder is a separate casting and is formed complete with its valve-chambers, which lie adjacent to one another on the same side of the cylinder. The copper water-jacket is formed and fastened to the casting in a manner that will be described presently. Each cylinder is spigoted into an aluminium crank-chamber, to which it is fastened by four studs.

These studs are screwed into the aluminium, and project through into the inside of the crank-chamber, where they receive nuts as a precaution against stressing the aluminium threads upon which the security of the cylinders would otherwise alone depend. At the same time, the use of studs instead



Two views of the 8-cyl. E.N.V. engine complete. That on the left shows the arrangement of the pumps and distributor, the latter member being separate from the magneto.

question have always carried a strong British association, for they have been the outcome of English capital and enterprise from the start. Already the equipment of the factory at Willesden is complete, and very shortly the organisation, which is such an

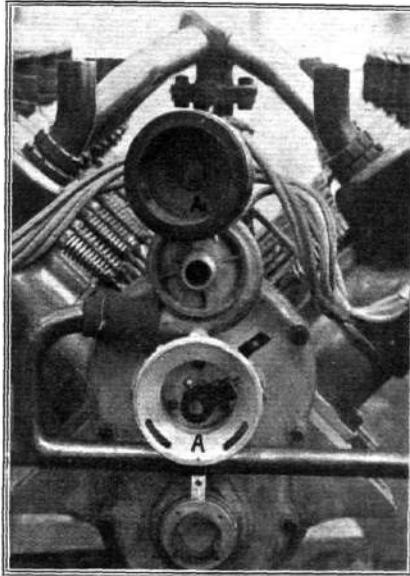


Two other views of the 8-cyl. E.N.V. engine. That on the left shows the position of the magneto more clearly, while that on the right illustrates the shape of the crank-chamber, which is a one-piece casting.

extremely difficult part of engineering, will result in a constant output, the first signs of which are even now apparent in the presence of the first few entirely British-built machines.

ot merely bolts passing through holes in the crank-chamber gives rigidity to the fastening that might not otherwise be available in the same degree.

The crank-chamber consists of a one-piece aluminium casting, which is strong and light in construction, for it is well ribbed on the inside by the brackets that carry the five large ball bearings on which the crank-shaft is supported. These bearings slide in place with the crank-shaft and are centred by set-screws from the outside.



"Flight" Copyright.

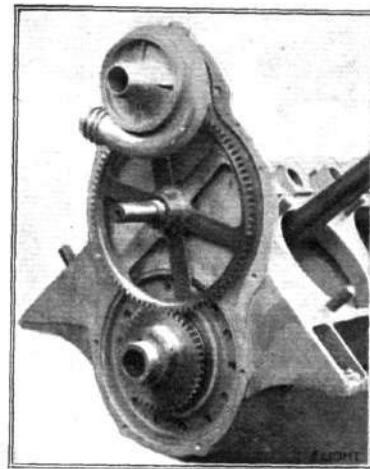
Detail view of the 8-cyl. E.N.V. engine, showing the cap of the distributor removed in order to illustrate how the contacts, A<sup>1</sup>, and the feeder-brush, A, can be inspected without disconnecting the wires.

Beneath the crank-chamber is a detachable aluminium box forming an oil sump. On one end of the crank-chamber is a detachable aluminium casing forming a cover-plate over the gear-wheels that drive the cam-shaft and pump. The other end of the crank-chamber is closed by the casing, which encloses the two ball-thrust races that enable the engine to drive either a propeller or a tractor-screw.

The crank-shaft is of the four-throw type, and in appearance looks like one that might have been constructed for a 4-cyl. engine. The crank-pins are somewhat wider than usual, however, since each crank-pin accommodates the big-ends of two connecting-rods belonging to opposite cylinders. A special nickel chrome vanadium steel, having a tensile strength of 80 tons per sq. in., is used for the construction of the crank-shaft, which is about  $\frac{1}{2}$  ins. in diameter, and is bored hollow with a hole that is about 1 in. in diameter.

Five ball-bearings support the crank-shaft in the crank-chamber, and the crank-webs are so shaped as to permit of the bearings being threaded on to the shaft. The journals on the crank-shaft have not been made especially large for this purpose, and the ball race is held on the shaft by means of two half-bushes that are adjusted in place when the ball-bearing has been set in its proper position. These half-bushes somewhat resemble bearing-brasses, but they are made of steel, and are flanged at one end only. They slide in between the journal and the ball-race from opposite sides of the bearing, the presence of the crank-web preventing any other method of adjustment.

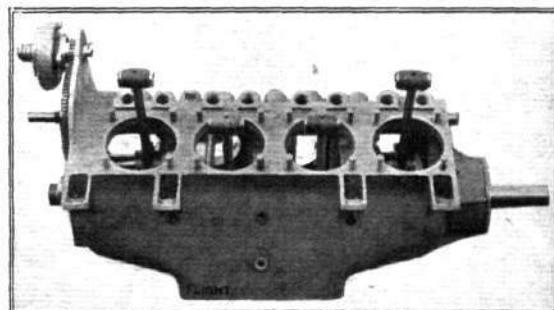
The connecting-rods are steel stampings, and are drilled hollow with a hole about  $\frac{1}{2}$  in. in diameter extending from the big-ends to within a short distance of the gudgeon-pins. This gives the connecting-rods a hollow oval section. The big-ends have white metal bearing surfaces poured straight on to the steel. The caps are held in place by two bolts. The gudgeon bearings are bushed with hardened steel tubes. Steel pistons are used, and great care is taken in machining them all over so as to reduce weight.



"Flight" Copyright.

Detail view of the 8-cyl. E.N.V. engine, showing the gear-wheels that drive the cam-shaft. Attention is drawn to the narrowness of the teeth of these members, which are only about  $\frac{1}{2}$  in. wide. The crank-shaft is supported on ball bearings, and one of them is visible immediately behind the lower gear-wheel. The eccentric boss of this gear-wheel drives the plunger oil-pump.

of some sort on to the tops of the push-rods, in which case it is relatively unnoticeable if the axis of the valve-stem is slightly displaced, but in the E.N.V. flight engine the slightest discrepancy is noticeable immediately. The valve-stems themselves ride in hardened steel guides, which are screwed into the cylinder-casting,

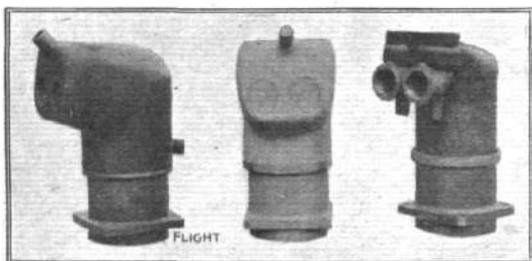


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View of the base-chamber of the 8-cyl. E.N.V. engine. This is a one-piece casting in aluminium, and supports the crank-shaft on ball-bearings. The crank-shaft is in place, and the connecting-rods are seen projecting from the cylinder holes.

Two connecting-rods are attached to each crank-pin.

and abut against specially-shaped washers that conform to the contour of the casting. The valves themselves are of nickel steel, and have a small ring of pure nickel electrically welded on their seatings, this metal having been found to prolong the life of the

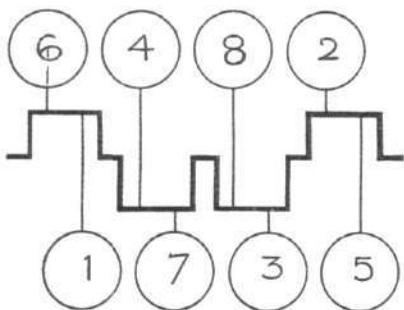


"Flight" Copyright.

Three views of an E.N.V. cylinder, that on the left showing the cylinder complete with its copper jacket, that in the centre showing the cylinder casting with the white metal core on to which the copper is electrolytically deposited, and that on the right showing the cylinder casting in its natural state.

seating in a perfect condition, and thus to avoid any necessity for grinding.

The carburetor is of the Zenith type, and is situated in the space between the two rows of cylinders. The jet feeds into a spherical mixing chamber, from which the mixture passes through radial induction pipes to the cylinders.



"Flight" Copyright.

Diagram illustrating the firing order of the 8-cyl. E.N.V. engine.

Driven by the gear-wheel on the cam-shaft is another gear-wheel that drives the magneto and also the water circulating pump, which is of the centrifugal type. The magneto rotates at twice the engine speed. An ordinary magneto provides two sparks per revolution of the armature, but an eight-cylinder engine requires eight sparks in two revolutions of the crank-shaft or a spark every  $90^\circ$  of rotation, in order to obtain which it is necessary to gear the magneto to twice the engine speed. The dihedral arrangement of the cylinders does not, since the angle is  $90^\circ$ , affect the matter. The firing intervals are regular and are determined by the number of cylinders alone; it is merely necessary to ensure that the magneto be so driven that a spark is available at the required instant, and to correctly couple up the wires in order to ensure that the spark occurs in the proper cylinder.

As an additional precaution against ignition troubles a special distributor has been designed for the E.N.V. engines, and forms a separate member from the magneto, to which it is ordinarily attached. The distributor rotates at half the magneto speed, and on the E.N.V. engine it is driven by the cam-shaft and is, therefore, situated in a very convenient and accessible position.

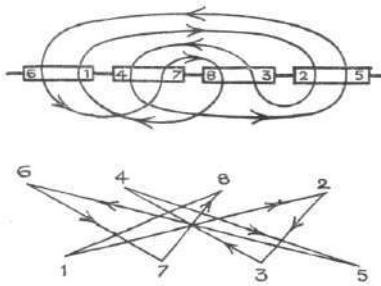
Lubrication of the E.N.V. engine is effected by a reciprocating plunger-pump worked off an eccentric formed by the boss of the gear-wheel on the crank-shaft which drives the cam-shaft. The pump is situated on a level with the base-chamber beneath the crank-chamber, and draws its supply from the oil-sump already mentioned. The oil is delivered into the hollow crank-shaft and passes thence through the big-end bearings into the hollow connecting-rods, and thus to the gudgeon-pins. The oil level in the sump is maintained at a constant height by means of a float-

operated valve, which admits oil as required from a supplementary reservoir carried in some suitable position on the machine.

Mention has already been made of the fact that the cylinder-jackets of the E.N.V. engine are electrically deposited, and it should be a matter of general interest to briefly describe the process of their formation.

The cylinder-casting having been bored and machined on the outside as much as is necessary or desirable, is clamped in a brass mould so that a mass of white metal may be poured on to its surface. This white metal occupies the space that will ultimately form the water-chamber, and its temporary purpose is to serve as a ground on which the copper can be deposited. Special precautions have to be taken in pouring the white metal, and its surface is subsequently very carefully treated under the sand blast. Thus prepared, it has a really beautiful silver appearance, and from this moment it is only handled with rubber gloves in order to avoid soiling the surface with any traces of grease. The next operation is to place the cylinder in what is known as a striking-bath, which consists of a heated liquid principally consisting of a weak solution of cyanide. It is stated that the precise nature of the bath is a secret, and much depends upon its action, for it is due to this treatment that the deposited copper amalgamates, as it were, with the surface of the metal to which it adheres; it is worth remarking, however, that cyanide is a splendid medium for removing all traces of grease, the presence of which militates more than anything else against successful deposition. Having been in the cyanide bath for an hour, the cylinder is placed in the depositing-tub for a period of 48 hours, during which time the copper jacket gradually grows under the agency of the electric current to a thickness of from  $1\frac{1}{2}$  to 2 millimetres.

On being removed from the depositing-tub the cylinder is placed in a bath of hot oil, at a temperature of about  $400^\circ F.$ . In about



"Flight" Copyright.

Two diagrams illustrating in different ways the firing order of the 8-cyl. E.N.V. engine. That above supposes the cylinders to be vertical, while that below allows for their dihedral arrangement.

ten minutes' time this temperature is sufficient to melt the white metal, which runs out through the spigot holes in the copper jacket and is subsequently recovered from the bottom of the bath.

At this stage the copper jacket presents a dark and slightly rough appearance, which is, however, speedily changed by a few minutes' application of the buffing machine into a high polish. The final operation is to re-bore a millimetre from the interior of the cylinder, in order to remove any traces of accidental contact with the acid, and to machine the faces against which the valve-covers abut. The copper joins the cylinder casting on the facings of the valve-chambers and on a flange near the lower end of the cylinder. The contact is in the nature of an amalgamation, and does not essentially rely on any other security, although it happens that the union used in the couplings of the exhaust and induction-pipes, and the screw-caps over the valves, would both serve to enhance the security of the upper joints.

Before being erected, the cylinder castings are tested to a water pressure of 500 lbs. per sq. in., and the jackets to a pressure of 75 lbs. per sq. in.

#### ⊗ ⊗ ⊗ ⊗ Magnets on the Italian Dirigibles.

In view of the statements which have appeared concerning the make of magnetos used on the Italian military dirigibles, we have been asked by the Bosch Magneto Co. to publish the fact that the motors of these airships are equipped with high-tension Simms-Bosch magnetos. An official letter on this subject from an officer of the Italian Engineer Corps also contains the statement that up to now the magnetos have given satisfactory results.

## CORRESPONDENCE.

\* \* The name and address of the writer (not necessarily for publication) MUST in all cases accompany letters intended for insertion, or containing queries.

Correspondents communicating with regard to letters which they have read in FLIGHT, would much facilitate ready reference by quoting the number of each such letter.

**NOTE.** — Owing to the great mass of valuable and interesting correspondence which we receive, immediate publication is impossible, but each letter will appear practically in sequence and at the earliest possible moment.

### THE CASE OF CAPTAIN BERTRAM DICKSON.

[810] Will you pardon me for the suggestion that the case of the recent regrettable accident to Captain Bertram Dickson seems to call for the making of some public effort, firstly, in the interests of the nation, and secondly, in that of a brave officer who has served his country well and who longs and is able to serve it better still.

Captain Bertram Dickson is in one sense not so well known to the public as he deserves to be, for he is one of the few aeroplanists who is inspired by very strong patriotic motives. Since he returned in poor health last October from four years' service as a Military Consul, he has taken no holiday, but has devoted all his time to and expended all his private means on making himself an expert in the use of and on the subject of flying machines, with the one object of striving to get the War Office to form a military aeroplane service, and in the hope of obtaining a post as expert to it. He attended our recent Army manoeuvres where, however, he was hampered not a little by absence of instructions and facilities; indeed, he was given very little encouragement to demonstrate what could be done even at these early stages. His entry into the field of practical aeroplaning was particularly brilliant, for he is the only Britisher who successfully challenged and who beat the French on their own ground. Just before our recent manoeuvres he made a tour of all the French aeroplane factories that he might be conversant with the latest developments and improvements in aeroplane construction, while his exceptional command of the French tongue and his excellent topographical gifts qualify him still further for the work that he has pursued in such whole-hearted fashion.

Such is the man who is lying ill at the Hospital Fatalefretelli as the result of the dreadful collision through another aeroplane descending on his machine from above and behind while both machines were in flight. I have private letters from those who are with him, and who state that at the second effort the Röntgen rays disclosed a badly-dislocated pelvis but no fracture. This is, of course, splendid news, for there is now every hope that there is nothing but the shock for him to fight against, and that once he has got over it he will be able to resume his work with all the old enthusiasm; for the accident is not of a kind that causes a man to lose any confidence in his machine, because neither the pilot nor the aeroplane failed in any way, nor were they defeated by the elements—the accident being in this respect unique. The shock, however, has been making him considerably delirious, and his mind is ill at ease at these as at other times, for he talks unceasingly of his work, of the War Office and of what he can do for it. He lies in Italy in pain and illness, and can do nothing for himself at present—he who has given his substance in qualifying himself to be of considerable service to his country. What is this country going to do for him? We have not a man of this quality and ability in the land that we can spare; and this one possesses particular qualifications for a particular part, which it is in the interest of the nation should be undertaken by him with the least possible delay. It seems a pitiable thing that a brave officer who is a victim of a terrible accident should be suffering in mind as well as body because the country seemingly does not know whether it wants a man or not. That cannot be public opinion in these Islands. Surely something can be done to make the situation more satisfactory.

Hampstead.

H. MASSAC BUIST.

### THE NEALE BIPLANE.

[811] Will you please correct a statement in last week's FLIGHT. Under the view of me "making a good flight at Brooklands," I am mentioned merely as "one of the Neale pupils," whereas I am more than that, and am one of the proprietors of the machine.

I originated the scheme, and with my friends found the whole of the money for the construction of "Neale VII."

BERTIE RIPPIN.

### NATURAL STABILITY.

[812] It has always appealed to me that some sort of a keel is necessary to keep the aeroplane upright and steady when flying in anything but a still atmosphere. My opinion is that if the pilot or engine be suspended rigidly below the main planes at the same distance from the centre of pressure as it is from the centre of

pressure to the tip of wing, there would be sufficient leverage, by pendulum action, to counterbalance the effect of a side gust.

Otherwise, in preference, obtain the same leverage by making the skids and wheels adjustable, to be raised or lowered either automatically or at the pilot's discretion, according to the wind velocity. At all events a machine so constructed that would always, voluntarily or involuntarily, come to earth on its landing chassis would be one step nearer the successful future of the heavier-than-air machine.

THOS. KELHAM.

[We have frequently pointed out in FLIGHT the principle of natural stability, although sound enough in theory—so far as the theory applies to conditions of normally still air—has not been found to work satisfactorily in practice. It is generally accepted that the method of hanging beneath the main planes adopted by Lilienthal in his gliding experiments was responsible for his death.—ED.]

### AERIAL VERSUS MARINE PROPELLERS.

[813] As a constant reader of FLIGHT I should be very pleased if you could inform me as to whether a boat driven by a propeller out of the water would go faster than one where the propeller is in the water. The power in each case would be the same. The propeller working in the air would, of course, be far larger than the one in the water.

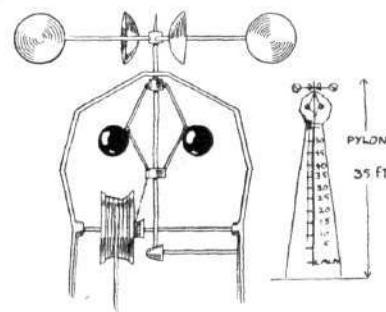
Kyde.

B. R. WOODWARD.

[The question as to whether a boat propelled by an aerial propeller would go faster than one propelled by a marine propeller depends entirely on whether an aerial propeller can be made to give a higher degree of efficiency than a marine propeller. We are not aware that there is any fundamental reason why propellers working in different media should not be of the same order of efficiency, but we think that the long experience designers have had with marine propellers ought, at any rate, to enable them to get better results in practice. Moreover, although marine propellers in some small boats are working in very disadvantageous positions they would certainly appear to have the advantage of aerial propellers in this important respect, for an aerial propeller to be of sufficiently large diameter would have its axis of thrust very much above the centre of gravity of the boat.—ED.]

### FIELD WIND GAUGE.

[814] Pleased to make the readers of your admirable paper a present of the following germ of an idea for a field telegraph wind gauge.



Dial both sides. Weighted indicator raised by winding up of chain upon drum; spindle of drum acted upon by chain from governor.

Westminster.

G. N. PHILIPS.

### PROPELLERS ON DIRIGIBLES.

[815] I have noticed that the question of the wake caused by the body of an aeroplane has been raised several times lately in FLIGHT. If it is worth while using special screw to recover the energy lost by this wake in aeroplanes (as Sir Hiram Maxim does), is it not more important to use the wake behind the envelope of a dirigible? In an aeroplane, the head resistance is only a fraction of the total, in a dirigible, on the contrary, the whole of the engine power is used to overcome head resistance. Yet in nearly all modern dirigibles the propellers are placed in frameworks projecting on either side of the car where there is no possibility of their recovering any of the lost energy, either from the wake of the car or from

that of the gas vessel. Surely a far better plan would be to place one large propeller at the stern of the gasholder and another smaller one behind the car. I enclose a sketch of the arrangement I suggest.

I notice in the September 3rd issue of FLIGHT a paragraph describing an arrangement of mirrors fitted to an aeroplane so as to enable bombs to be accurately dropped on to warships. It may interest

some of your readers if I recall that the same idea occurred to my father, Mr. George Griffith, who introduced it in his novel, "The Angel of the Revolution." This book was published seventeen years ago. The appliance was supposed to

be fitted to the French and Russian war balloons, which destroyed the remnants of the British Fleet by its aid. The war balloon was manoeuvred above the ship selected till the glare of the funnels was seen reflected in the mirrors; a bomb of dynamite was then dropped by opening a trap.

Douglas.

A. A. GRIFFITH.

#### STABILITY OF THE VOISIN BIPLANE.

[816] *Apropos* of the all-absorbing question of lateral stability, can you inform me why Voisin has discarded his vertical curtain type of machine? I have always considered that the solution of this stability difficulty would be found in correctness of design of an aeroplane, and the "box kite" idea of the Voisin machine as originally built appeared to me to be a long step in the right direction.

Regarding the efforts of your correspondents to secure stability by means of pendulums and the like, I would recommend that they look through the Patent Specifications at the nearest library where they are kept. The patent specifications which will interest them will be found in the "Subject Matter Index" for each year under the heading "Aeronautics," sub-heading "Steering, balancing, and regulating altitude, automatically." I should think that every possible application of a pendulum to secure stability has been patented at one time or another, but I have never yet heard of a machine fitted with a pendulum making any kind of a flight. The idea appears to me to be bad in principle. There is the disadvantage of oscillation, the disturbing effect of air-pressure at flying speed (which is bound to be considerable), and, where the pendulum is used to directly actuate, by its weight, the lifting aileron, it will be found that the moving of the pendulum towards the end of the plane which has dipped below the horizontal will always balance the lift which it gives to such aileron, consequent upon the moving of the centre of gravity towards the end which has dipped.

Pendulums opening valves for the operation of ailerons by compressed air appear to be the least objectionable, but the patent records are full of them, and I think the failure of these may be attributed to the fact that they are unable to adapt themselves to any particular circumstances. It is not always advisable, one would think, to actuate the lifting aileron for a dip of, say, about 5° from the horizontal, but the pendulum, assuming that it is in good working order, would open the valve immediately, and the resulting lift would throw the end of the plane which had been depressed as far above the horizontal as it had previously been below it. The result of the machine thus oscillating, with the pendulum-valve doing a little oscillation "on its own," may be imagined.

Apoloising for the length of this letter, and trusting you will be able to give a reply to the first part *re* the Voisin machine (I will depend on pendulum inventors for a reply to the rest!).

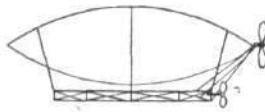
Manchester.

"SIMON."

[The original Voisin biplane, although undoubtedly possessed of a fair degree of natural stability of a kind that made it a suitable machine to learn on in fine weather, is nevertheless seriously handicapped in point of speed and in the facility of quick control necessary to the winning of competitive events, which in themselves constitute a governing factor in the development of aviation at the present time.—ED.]

#### EARLY HELICOPTER.

[817] Maybe W. A. Harvey (639) and others of your correspondents who have made inquiries *re* helicopters, are seeking information of Wollaston's brolly-screw (helicopter parachute) soaring apparatus, invented and made by the brothers Herbert and Ernest, experimenting at Miller's Flat, Elmstead, Kent, 1885-88. This machine was a soarer only, not a flyer, being always held captive. It was never started from ground, but from a bent iron rod at the end of a 22 ft. long ash pole. This pole was balanced near the half length on a forked pivot, so that it could be swung clear after release of



brolly. The pole itself was on a tripod 12 ft. in height, starting as follows: From one end of pole to the other, through guides, ran a cord to a snatch-link on bent iron at end of pole. The snatch-link closed by spring into ring attached to screw-spindle cap on top of brolly. About 15 ft. of strong rope was fastened to other end of pole, some length of snatch-link cord hanging free. The weight of brolly just brings pole down, the Wollastons standing at rope ready to pull as soon as "pilot" has seated and strapped himself secure. The "pilot" was in every trial, myself, weighing then 7 stone 6 to 9 lbs. At signal "All right," a see-saw steadily up and down by pulling and giving on rope until the screw has attained its greatest momentum, then when the brolly end of pole is at its greatest height the snatch-link cord is pulled, the pole being swung clear instantly. After release the brolly slowly descends a few feet, but "pilot" working quickly the brolly soon gathered purchase and rises. The tether-ropes are attached to foot-rest by swivel. After having reached height thought advisable to ascend, two grip-catches are let go by "pilot," which engage with tether-ropes, those holding such go wider out, and so stop spinning motion; 60 to 80 ft. was about the usual, although of course very much higher could have been attained. Over 100 ascents were made, and on June 16th, 1887, Mr. Shadbolt, balloonist, was a very interested assistant with brolly and gliders, tripod and pole. Fixtures were made by Dean, ladder-maker, Redhill. To any of your readers who are bona fide experimenters with helicopters I will gladly give fuller details if inquiries sent under cover to FLIGHT.

Orpington.

PIONEER.

#### AEROPLANES AND YACHTS.

[818] I have for the past three years been contending that an aeroplane should—to be stable—have a greater chord than span, so I read with great interest your article on "Flyers and Yachts." I am rather amused to find that you are using, in recommending the broadside aspect, exactly the same arguments as I have been using for the end-on aeroplane. We are, therefore, not likely to quarrel over facts.

With respect to the Tee test, you say, "If the paper has been cut as it should, the piece falls like a stone, without swerving one way or the other." Exactly. And if allowed to drop broadside on "quite a different result will be observed, for the T will reverse in its descent so that it reaches the ground stem first, as in the former case."

If this proves anything, it proves that end first is the easiest and most stable way through the air, and that broadside first is so unstable a method of progression that if the slightest draught cause it to swerve from its course by a hair's breadth it at once turns turtle and resumes its natural and proper position.

Then you say "the T piece of paper, as we have seen, reverses if dropped head (broadside) down, but except for this one manœuvre, it may otherwise be described as stable in its path of descent." I am here forcibly reminded of the famous description of a crab as a "little red fish that walks backwards," and the criticism that although the crab was not necessarily little, was not red, was not a fish, and did not walk backwards, yet except for these slight errors the description was quite correct. Could we not say, Mr. Editor, with equal justice that a pyramid standing on its apex might turn over on to its base, but except that for this one manœuvre it was quite stable? I agree with you that there is "only one stable position, and that position is attained automatically." It is: End on. Your arrow lesson, again, goes directly against your broadside on principle, as, in fact, does everything in nature with one exception—the bird. Now you will say that as the bird is the only thing that moves in the same medium as the aeroplane, the fact that he goes broadside on is sufficient to prove your theory.

Mr. Editor, I think the greater part of all the difficulties that retard the progress of aviation is the absurd idea that an aeroplane must be shaped like a bird. There is not the slightest likeness between the two things. A bird uses its wings as levers to lift and propel itself. Does an aeroplane have wings for that purpose? Well, why copy the shape? But an aeroplane glides, and a bird glides, both broadside on. True, and the glide of the bird is so unstable that its wing and tail tips are incessantly at work to preserve its equilibrium, and even then, though the countless generations of practice have made the movements automatic, it often loses its balance in a gust, and has to flap and control itself to recover. As to the glide of the aeroplane, let the death-roll of our aviators tell how stable it is. When our aviators have developed a bird's brain, a bird's sense of balance, a bird's nerves, muscles, and strength, and a bird's capability of nice adjustment of wing tip to air pressure, we may shape our aeroplane like a bird, and the aviator may, perhaps, succeed in keeping it balanced and avoiding that "one manœuvre" by which the force of gravity seeks to assert itself. For my part I prefer to have the force of gravity as much on my side as possible.

Now with regard to the "stray field." You say the leakage round the ends of the plane is lost, and the way to make that loss as small as possible is to make the chord short as compared with the span. I do not at all follow this. The leakage is caused by the disturbance in the air due to the passage of the cutting edge of the plane. This leakage is in direct proportion to the length of that edge, and has no reference whatever to the fore and aft length of the plane. To put it crudely, if a plane has a cutting edge of 30 ft., it will cause a certain amount of disturbance, and this disturbance will be just the same whether the plane is 6 ft. fore and aft or 60 ft. fore and aft. It seems to me, therefore, that the way to reduce the leakage is to reduce the disturbance, and the way to reduce the disturbance is to reduce the cutting edge of the plane. The Dunne machine owes its stability to this among other things, for its arrow-shaped edge enters the air with the minimum of effort.

As to other things, there is no comparison in the advantages of the end-on aeroplane. Speed, for instance; stability has been already mentioned; lift, of course, remains the same product of angle and speed; the elimination of constructional difficulties, also, would be of immense advantage, and the plane might be made much stronger and lighter.

To conclude. With regard to the yacht. I am not a professional, and I speak subject to correction, but when I was at sea I always understood that it was the object of the sailor to sheet the sails home so as to get as flat a surface as possible to the wind. And I was always under the impression that the only reason why the sails were not absolutely flat was because it was impossible to get them so.

Manchester Street.

W. LE MAITRE.

[We cannot quite understand the point of view taken by our correspondent, for although everyone is, of course, quite at liberty to hold a personal opinion on any subject, something more substantial than mere verbal argument must be advanced by anyone who seeks to refute that something that has come to be commonly accepted as so much of a physical fact as the relative efficiency of the broadside aspect as compared with the end-on aspect of an aeroplane.

Our correspondent seems to confuse the issues somewhat in respect to the "Tee" test. The object of this test is to show that the broadside aeroplane has a greater lifting efficiency than an end-on aeroplane. The head and the stem of the Tee have equal areas, but the experiment always shows that the head tries to rise above the stem, thus proving that it is exerting a greater lift. The question of relative stability was not one that we were discussing in our article. Our correspondent remarks that the lift of an end-on aeroplane "remains the same product of angle and speed," but this is an absolute contradiction of fact (see Note 19 "Flight Manual"). The implied suggestion that the Dunne aeroplane flies in end-on aspect is one that we should imagine will not receive very much support from the inventor of that particular machine.—Ed.]

## ENGINE CONTROL.

[819] Referring to this vital proposition, it would appear that in most cases no ignition timing or carburetor control is arranged for. Throttle manipulation may be useful for various slow circuit competitions, &c., and as a safeguard when cutting off, but a carburetor which can give the best results attainable under the widely varying atmospheric conditions without the use of a hand-controlled extra-air valve, is certainly a wonderful piece of apparatus.

We are not considering for the moment the question of efficiency so much as reliability, but the former alone will probably be a sufficient reason in the near future to render this extra-air device necessary. The very usual automatic extra-air valve as applied to car engines can only be expected to approach and not invariably attain the best results.

As regards ignition, it is well known that the spark from a magneto is not automatically advanced in the same proportion as the engine speed, it being necessary to vary the speed under certain conditions, particularly when flying at a great altitude.

As the slight additional weight of, say, 5 lbs. apparently indicates considerable advantages, do you consider that the above modifications should be so often neglected?

Whitefield. OSWALD H. BROWNE and JOHN B. BUTLER.

[We have little doubt that these details will settle themselves in course of time, when pilots become so expert that they feel the need of such refinements and demand their provision. But just at the moment the problem is to get engines to develop their power at all, even when allowed to go as they please, and pilots as yet have only asked that the power shall be enough for flight when the engine is working on full open throttle. Improvements in carburation and ignition are bound to come in as the art itself advances.—Ed.]

## MODELS.

## "TAIL FIRST" MODEL.

[820] In reference to F. N. H.'s letter (735), the model is of a monoplane type, and flies tail first. The span is 3 ft. and the length 30 ins. The main planes are of the Antoinette type, tapering, being 5 ins. in the centre and tapering off to 3 ins. at the tips. It is driven by a 9 in. propeller of my own make, and takes 8 yards of rubber made into 10 strands. The planes are set at a slight dihedral angle, and the front plane has two large ailerons. The frame is triangular, with a central stay of bamboo. The weight of the machine is 4 oz.

Thames Ditton.

C. RIDLEY.

## DURATION OF MODEL FLIGHTS.

[821] Could some reader tell me how long the average model flyer will remain in the air during the course of one of its best flights, and what length of time would probably create a record in this respect?

At model competitions, is there generally a class for machines which stay in the air for the longest time? I should think it would bring better and quicker developments than either distance or speed competitions.

Hammersmith.

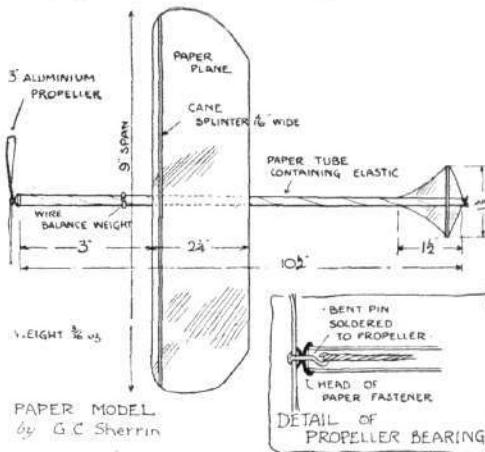
J. MORSE SCOTT.

## PAPER MODELS.

[822] I am sending under separate cover two or three of the paper models which I happen to have by me, from which you will readily judge whether you consider their style and construction likely to be of interest.

The chief points are that they are cheap, easy to make, and very efficient.

The propelled model has made several flights of 100 ft. or more.



PAPER MODEL  
by G C Sherrin

The glider is a plan of a rook, which I measured up last spring, and of which I have other particulars.

The separate propeller is enclosed to demonstrate the construction of the bearings, which you will notice consists of paper-fastener heads, an eyelet, and a pin, all parts easily obtained.

I thought it possible that some of your readers would be able to develop the ideas contained in them.

Ingatstone.

GEO. C. SHERRIN.

## SUMMARY OF OTHER CORRESPONDENCE.

[823] Cambering Ribs.—A. J. C. (Prestwich), like No. 731, would be glad of information as to the best and simplest way of making a single-surface plane with correct camber.

[824] H. Boulter (Kidderminster) asks what size model an 8-in. Cochrane propeller will fly.

[825] Derby.—For the method of fixing wings to the framework of a monoplane see sketch of the Blériot attachment that appeared in FLIGHT, July 31st, 1909.

[826] District Model Clubs.—Arthur Rippen (5, Liverpool Road, Nunhead) would be pleased to help in forming a club for South London.

## AMERICAN NOTES.

## Long Cross-Country Flight in U.S.A.

USING a Wright biplane, A. Hoxsey, on Saturday last, made a successful trip from Springfield to St. Louis. On arrival at his destination he failed to recognise his landing place and flew five miles further on, where he came down successfully. As the crow flies the distance from Springfield to St. Louis is 86 miles, but it is claimed that as Hoxsey followed a circuitous route the total distance traversed by him was 104 miles.

## From Chicago to New York.

AFTER several days of waiting at Chicago, Mr. Eugene Ely, on a Curtiss biplane, started off on Sunday afternoon with the intention of flying to New York and winning the £6,000 prize offered, for the 900-mile flight, by the *Chicago Evening News* and the *New York Times*. The aviator has a week in which to complete his journey, and he may stop as many times as he pleases. As a matter of fact, he descended on Sunday night at Beverley Hill, only about 11 miles from Chicago, and there he was forced to spend the night. Failing to receive in quick time the necessary spare parts required to repair his machine after his sudden descent, Ely has abandoned his present attempt.

## American Duration Record.

WELSH, at St. Louis, on Tuesday, by remaining in flight for 3 hours 5 mins. 40 secs., established a new American duration record.

## Mr. Roosevelt Ventures Aloft.

DURING a visit to the flying ground at St. Louis on Tuesday, Mr. Roosevelt accepted the invitation of Mr. Hoxsey to accompany him for short trip in the "central blue." Three laps of the aerodrome were covered, the Wright biplane being in the air for just under 3½ mins. It is a good testimonial for flying that the ex-President was so greatly pleased with the trip, which he said was the finest experience he had ever had, that he would have liked to have stayed up for an hour.

## Wright Brothers' Racing Biplane.

SOME particulars have been published recently in the Paris *Daily Mail* regarding a new racing biplane which is being constructed by the Wright Brothers at Dayton, Ohio. Although the machine will be similar in general design to the ordinary standard biplane, and be fitted with the same motor, the dimensions are much smaller, and it will be considerably lighter. From statements attributed to Mr. Orville Wright it is announced that the speed of the machine will be between 55 and 60 miles an hour, but it is believed that the designed speed of the machine is between 70 and 80 miles an hour. It will only carry one man, and he will be the lightest on the Wright staff of pilots.

## A Wright Monoplane.

WITH a view to placing the speed record to their credit, and doubtless making a strenuous effort to secure the Gordon-Bennett Trophy which is held in the land of the Stars and Stripes, an almost incredible report states that the Wright Brothers have constructed a monoplane which they believe will be faster than any other flying machine. The machine is said to have two propellers arranged as in their biplane, and the tail will be of the biplane type. Three seats are fitted, the pilot being in front, with the two passengers seated side-by-side behind him.

## An American £10,000 Prize.

A PRIZE of £10,000 has been offered in New York by Mr. William Randolph Hearst for the first aviator of any nationality who, within twelve months, crosses the American Continent from side to side, either from Boston or New York to Los Angeles or San Francisco, or vice versa, passing en route in the neighbourhood of Chicago. The distance, which is about 3,000 miles, must be covered within 30 consecutive days. Competitors may stop as many times as they like, and although they may substitute damaged parts, the same machine must be used throughout the trip.

## The French Gordon-Bennett Team.

WHEN "La Lorraine" left Havre last Saturday morning she numbered among her passengers Messrs. H. Latham and Jacques de Lesseps. The former will represent France in the Gordon-Bennett competition, while the latter is also going to America for the International meeting at Belmont Park. It will be remembered that the French Gordon-Bennett team was originally composed of Latham, Labouchere, and Leblanc, but owing to his illness Labouchere will be unable to go to America. The Aero Club of France will select its third representative from the three Blériot pilots, De Lesseps, Aubrun, and Simon, all of whom will be taking part in the American meeting.

## IMPORTS AND EXPORTS, 1910.

Aeroplanes, airships, balloons and parts thereof (not shown separately before 1910).

Imports.	Exports.	Re-Exportation.
£	£	£
January ... 2,516	January ... 750	January ... 550
February ... 437	February ... 2,950	February ... 600
March ... 7,516	March ... 128	March ... 1,470
April ... 6,305	April ... 950	May ... 350
May ... 846	May ... 400	June ... 558
June ... 7,961	June ... 642	July ... 830
July ... 11,608	July ... 336	August ... 1,455
August ... 6,188	August ... 812	September ... 1,668
September ... 1,034	September ... 4,340	September ... 7,481
9 months ... 44,411	9 months ... 11,308	9 months ... 7,481

## OFFICIAL RECORDS.

Distance and Duration.—Olieslaegers (Belgium), at Rheims, on a Blériot monoplane with Gnome engine: 244<sup>3</sup>/4 miles in 5h. 3m. 5<sup>1</sup>/<sub>2</sub> s.

Speed.—J. Radley (Great Britain), at Lanark, on a Blériot monoplane with Gnome engine: 1 mile in 47<sup>1</sup>/<sub>2</sub> secs. = 75·95 m.p.h.

Altitude.—Wynmalen, at Mourmelon, on a Henry Farman biplane fitted with Gnome motor: 2,800 metres.

## Aeronautical Patents Published.

## Applied for in 1909.

Published October 13th, 1910.

15,899. W. G. HICKS. Aerial machines.
25,032. V. REDLICH. Aeroplanes.

## Applied for in 1910.

Published October 13th, 1910.

7,037. A. DZINK AND M. POLACK. Airships.
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## DIARY OF FORTHCOMING EVENTS.

## Foreign Events.

1910.	1910.
Oct. 8-16 Ostend.	
Oct. 15-Nov. 2 Paris Aero Show.	
Oct. 17-25 St. Louis, Gordon-Bennett Balloon Race.	
Oct. 18-30 Brussels Meeting.	
	Oct. 22-29 American International Meeting, Belmont Park, N.Y.
	Oct. 27-Nov. 1 Liagge.
	Oct. 29 New York. Gordon-Bennett Aviation Cup.
	Dec. 4-18 Marseilles.

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